

JULY 1959

# Material Handling Engineering

Established in 1945 as FLOW Magazine

In this issue . . .

The Role of Labor Relations  
in Material Handling  
Engineering  
page 52

Selection and Use of  
Roller & Wheel Conveyors  
page 54

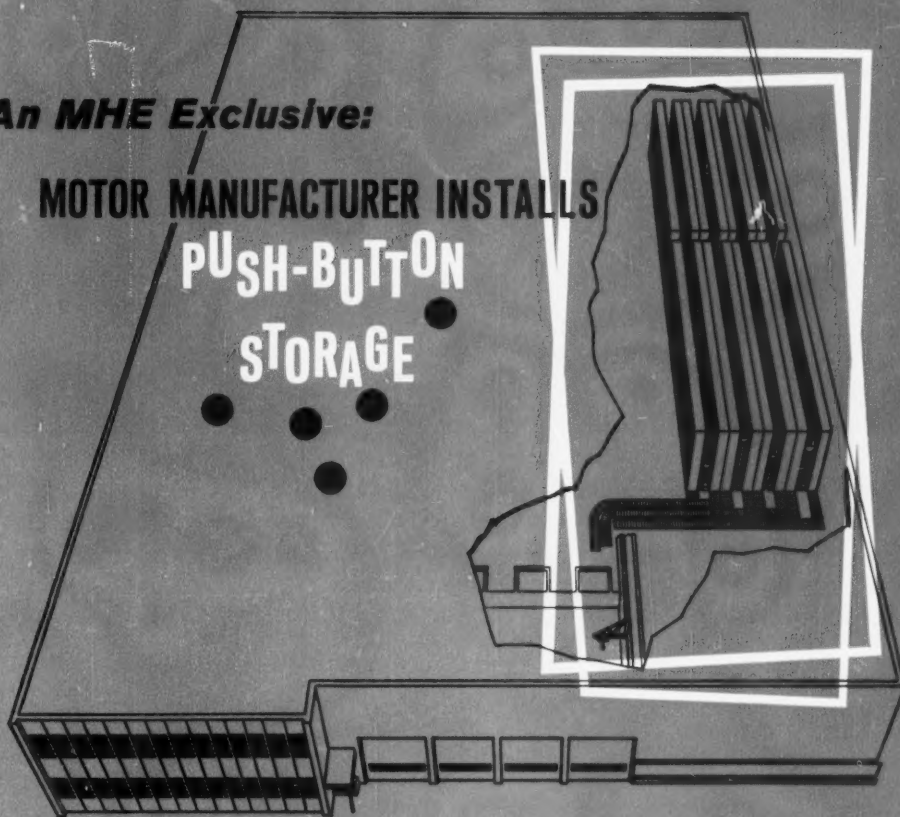
Dock Levelers vs.  
Truck Levelers  
page 74

STEVENSON RICE  
UNIVERSITY MICROFILMS  
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FIZ

*This  
special copy  
includes the*

**An MHE Exclusive:**

**MOTOR MANUFACTURER INSTALLS  
PUSH-BUTTON  
STORAGE**



PUBLISHED BY THE INDUSTRIAL PUBLISHING CORPORATION

The original publication of the material handling industry, preferred by identified buyers of material handling, packaging and shipping equipment and supplies.

**MOVE THAT HEAVY LOAD ANYWHERE... EASILY**

**WITH SUPER HEAVY DUTY**

# Faultless Casters



**SERIES  
1300**

3/4" thick swivel top plate. Dustproof self-contained swivel load bearing. Hardened ground and polished raceways. Timken combined radial and thrust bearing. Thick steel horn with reinforced ribs. Special alloy wheel with two Timken bearings.

**Dreadnaught Casters move loads up to**

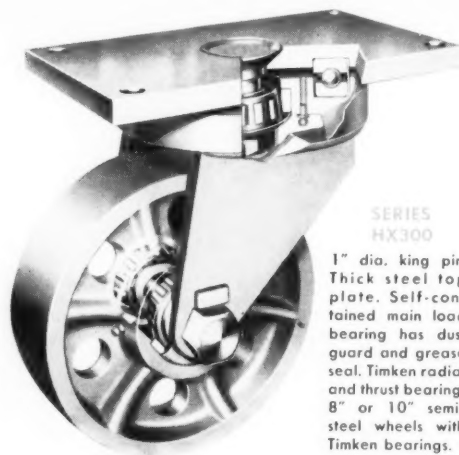
**7½ Tons**  
PER CASTER

When it comes to **CASTER STRENGTH** for rolling the big loads along your assembly line, or around your stock pile area, Faultless engineered casters can give a lift to your big production and warehousing problems. Above, a Faultless Series 1300 Swivel Plate Caster and two Faultless wheels in special mountings easily handle a 22,000 lb. Caterpillar Diesel-electric engine with minimum man-power. This is a usual task for the Faultless Series 1300 Dreadnaught Caster.

**Super strong HX300 Casters handle loads up to**

**5 Tons** PER CASTER  
WITH 8" WHEEL

For surplus strength to roll under cargoes that break down or damage ordinary casters, the HX300 Series, extra heavy duty swivel caster, will fit your specifications. It's precisely engineered throughout and constructed of quality materials to provide a caster capable of easily taking on 10,000 lb. loads, while keeping production lines moving with minimum handling costs.



**SERIES  
HX300**

1" dia. king pin. Thick steel top plate. Self-contained main load bearing has dust guard and grease seal. Timken radial and thrust bearing. 8" or 10" semi-steel wheels with Timken bearings.



**ASK YOUR DISTRIBUTOR:** Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. He and one of the strategically located Faultless Sales Engineers are available to work with you on every handling problem in your plant. Both are listed in the phone book Yellow Pages, under "Casters," and the Faultless heading.

**Faultless Caster Corporation, Evansville 7, Indiana**

Representatives in Atlanta, Baltimore, Boston, Buffalo, Chicago, Cleveland, Dallas, Detroit, Grand Rapids, Greenville, S. C., High Point, Indianapolis, Los Angeles, New Orleans, New York, Philadelphia, Portland, St. Louis, Washington, D. C., Canada: Stratford, Ontario



Circle 51 on Reader Service Card for more information



All-Service Xtra Cushion Solid Tire from Goodyear—a rugged performer from any angle!



## New Slant on Pressed-on "Solids"

Have you ever seen an All-Service "Solid" from this angle before? Chances are, you haven't. But we photographed it this unique way to dramatize some very practical points.

For example, notice the tread design of this Goodyear Industrial Tire. Notice how the lugs are sharply angled for superior traction on ramps or wet, slippery surfaces.

Check the thickness of that tread too. It's extra thick for extra resilience and cushioning. The result: lower floor and truck maintenance costs. Less load damage, too.

Add to all this—tougher compounds for minimum chipping and cutting, lasting adhesion of rubber to base band, *plus* maximum smoothness and stability.

These advantages can mean only one thing to you: Superior service at lower cost. For all the facts on the All-Service—and the complete line of Goodyear Solid and Pneumatic Industrial Tires—call in your Goodyear Dealer. Or write: Goodyear, Industrial Tire Sales, Akron 16, Ohio.



INDUSTRIAL TIRES BY

# GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

All-Service—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Circle 61 on Reader Service Card for more information

JULY, 1959

Motorola 2-way radio users

# INCREASE THE PRODUCTIVITY of industrial vehicles 34%\*

\* Operating records of 45 typical companies prove that 2-way radio increases productive operating hours per day of each vehicle from 5.3 to 7.1—a gain of nearly 2 HOURS A DAY!

One of the men surveyed put it this way: "Without radio, we would require many more vehicles and men to carry on our present operations."

In plants of all sizes, Motorola 2-way radio enables drivers and machines to increase their productivity. Radio links materials handling vehicles both inside and outside the plant with one central dispatcher . . . helping move *more materials faster*, and getting them where they're needed *on time*.

No matter what vehicles your business uses—a fork lift truck, a supervisory car, or a 10 ton truck—you, too, can profit from Motorola 2-way radio. It's simple to obtain your Motorola mobile radio system; all details are handled for you. Motorola's complete 2-way radio "package"—systems engineering, financing, installation and maintenance—assures you of the finest communications system, designed to fit your needs. Get the proof—write today for your Motorola case history portfolio.

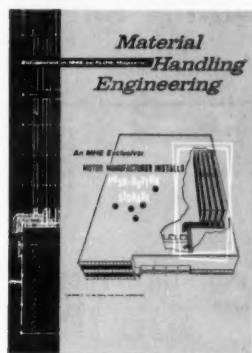
Circle 91 on Reader Service Card



## MOTOROLA 2-WAY RADIO

Motorola Communications & Electronics, Inc., A Subsidiary of Motorola Inc., 4501 Augusta Blvd., Chicago 51, Illinois





**COVER:** When a motor breaks down on a production line, a replacement is needed in a hurry. At its Midwest Distribution Center, Reliance Electric Co. uses a random selection storage system to store motors, record their location, and select them on request. The resulting efficiency in in-plant handling results in routine same-day delivery to customers.

## FEATURES

- 50 **PUSHBUTTON STORAGE EXPEDITES DELIVERIES**  
Random selection system finds and selects stored motors in minutes.
- 52 **THE ROLE OF LABOR RELATIONS IN MATERIAL HANDLING ENGINEERING**  
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- 53 **INTEGRATED SYSTEM SORTS AND PALLETIZES BOXES OR BAGS**  
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- 58 **PAPER PLANT MOVES TOUGH-TO-HANDLE STARCH BY AIR**  
There were some unusual problems—it took a versatile storage system to solve them.
- 60 **GOOD HANDLING SAVES FRUIT CROPS**  
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- 61 **COST-CONSCIOUS SCRAP HANDLING**  
Here's how a large scrap dealer cut non-ferrous handling costs 50%.

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Supplier and customers both benefit from steel strapped loads.
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A study of one of packaging's most damaging nuisances.
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How Western Electric evaluates its shipping and receiving dock needs.
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Akron Beacon Journal's shipping room matches its ultra-modern presses.
- 76 **MECHANIZED LOADER SPEEDS JET BAGGAGE HANDLING**  
Packaging and shipping idea of the month.
- 78 **FAST TRUCK UNLOADING HURRIES COAL ORDERS**  
A 20-ton truck is unloaded in 6 minutes by means of a continuous conveyor.



reader's guide continues on next page





**...do it faster  
for less cost**

▼ for package handling

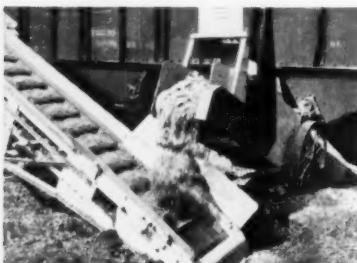


This Farquhar Power Belt Conveyor line increased loading capacity and reduced work force needed to move bags from bag filler into trucks.



In-plant handling of 4000-pound parts is simplified and speeded in this industrial plant by using Farquhar Gravity Conveyors.

▼ for bulk handling



Sturdy, trouble-free Farquhar Conveyors provide ample capacity for handling tons of bulk materials.

For more information on all types of money-saving Farquhar Conveyors

**Write or send this coupon**

**A. B. FARQUHAR DIVISION**  
The Oliver Corporation  
Conveyor Dept., U-06, York, Penna.  
Factory Branch: 618 W. Elm St., Chicago, Ill.  
Please send me information on...  
☐ "How to plan your own conveying system" (Bul. 500)  
☐ Ve-Be-Veyor low-cost aluminum conveyor (Bul. 600)  
☐ Roll-Free Gravity Conveyor (Bul. 801)  
☐ Farquhar Bulk Handling Conveyors

Name \_\_\_\_\_  
Company Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

Circle 50 on Reader Service Card

## Material Handling Engineering

volume 14 number 10

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### NEXT MONTH IN MHE

our editors will guide you along the intricate paths of the U.S. Post Office's Mail-Flo system. We'll study the installation at the Detroit Roosevelt Park Annex Post Office. Our next issue will also feature some viewpoints on leasing and renting material handling equipment. Read it carefully—it may save you money.

MATERIAL HANDLING ENGINEERING

# AUTOMATIC Transporters

*Versatile... Compact...  
Powerful...*

**and how they'll cut  
your handling costs**

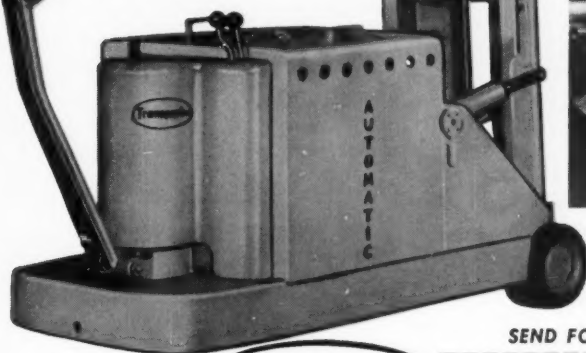
For the 1001 jobs that a walkie-type truck can do, it's your best materials handling buy. Naturally, it costs much less than a rider-type truck. So, the same money buys you more units...mechanizes more jobs with greater plant efficiency. The walkie costs less to operate...works easily in areas unsafe or too crowded for rider-type trucks, yet performs essentially the same functions.

**Find exactly what you need in  
Automatic's Complete Transporter Line**

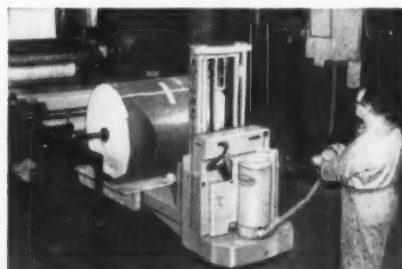
Automatic's 50 standard models...which include low-lift pallet and platform models, counterbalance-type stackers, straddle and platform-type stackers, and tractors...can be varied to satisfy the most highly specialized requirements. And you can have your Transporter on lease or budget purchase terms if you wish.



**High stacking** for pallet racks or unit loads, yet easily enters low over-the-road trucks. Only Automatic offers the NEW SKYLIFT Mast...68" mast lifts 144"...for cantilever-type stackers in 2000 lb. and 3000 lb. capacities. WST Models in 1000 to 4000 lb. capacities.



**Straddle stackers** handle loads in extremely narrow aisles. Load carried on forks between outrigger arms...eliminates counterweight. Model WAT, capacities 2000 lbs. and up.



**High-lift Platform Stacker** spots bulky skidded loads. Model WLT, capacities 2000 lbs. and up.

**SEND FOR FREE ILLUSTRATED BOOKLET**



*Advanced Materials Handling  
At Less Cost To You*

**AUTOMATIC TRANSPORTATION COMPANY**

Division of The Yale & Towne Manufacturing Company  
141 West 87th Street—Dept. K-9—Chicago 20, Illinois

DRIVEN INDUSTRIAL TRUCKS

**AUTOMATIC TRANSPORTATION COMPANY**  
Division of The Yale & Towne Manufacturing Company  
141 West 87th Street • Dept. K-9 • Chicago 20, Illinois

Name \_\_\_\_\_ Title \_\_\_\_\_  
Firm \_\_\_\_\_  
Address \_\_\_\_\_  
City & Zone \_\_\_\_\_ State \_\_\_\_\_

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Too bad, indeed. *Good* for you, though, that Roebing Slings do exist to make *your* materials-handling job simpler, safer, swifter.

That goes for virtually anything that needs to be lifted; there's a Roebing Sling made to do the job. For special needs, Roebing Engineers will design and make a sling to meet them exactly.

Whatever the type—standard or special—you'll find they embody advanced construction features that certify safe, steady service and stability under load.

To give you the complete Roebing Sling Story, we offer you a 48-page catalog. It con-

tains information on All-Purpose Slings, Flat-weave Slings, Roegal® Cable-Laid Slings and a full line of end fittings. It's the ready reference for simplified materials handling. Just ask for A-938. Wire Rope Division, John A. Roebing's Sons Corporation, Trenton 2, New Jersey.

Of course, if you want any immediate sling help or information, your Roebing salesman or distributor is anxious to be of service.

**ROEBLING**

Branch Offices in Principal Cities  
Subsidiary of The Colorado Fuel and Iron Corporation



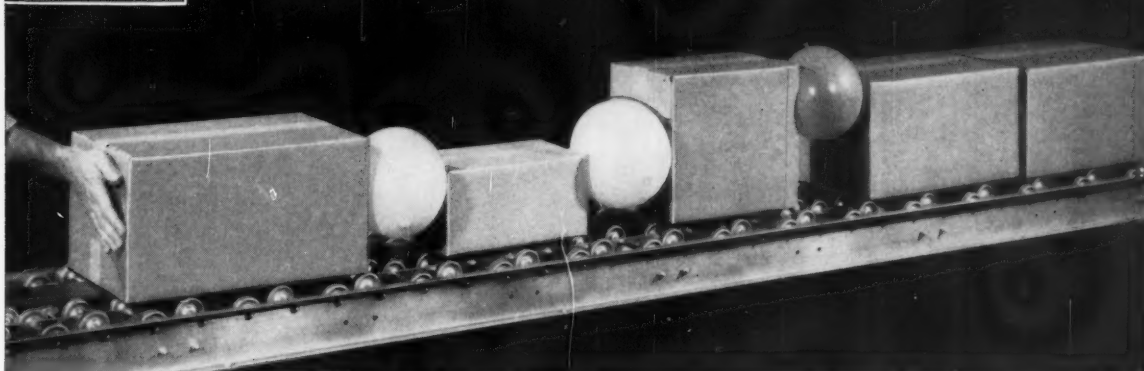
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**MATERIAL HANDLING ENGINEERING**





# line pressure's gone!



## New **Rapistan**® APC pressure-sensing conveyor solves accumulation problems

Believe it or not, the power belt conveyor in this picture is running — 50-lb. cartons tightly loaded on the line — but there's not enough pressure generated between cartons to compress the balloons holding them apart.

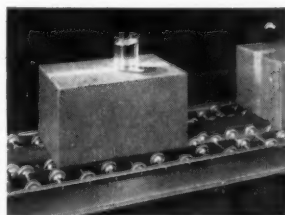
This is Rapistan's new APC (Adjustable Pressure) Conveyor. Its unique design keeps the line pressure so small the line can be held back with only finger-tip pressure regardless of the weight and number of cartons. It's always easy to stop the line for order assembly, packing, marking, inspection, shipping, or whenever desired in operations involving processing or accumulation of material on a conveyor line without stopping the belt.



Write today for Bulletin 1,200, illustrating APC Pressure-Sensing Conveyor. Circle No. 10 on the Reader Service Card.

### "Fluid-Drive" Clutching Action

Materials on APC Conveyor start on their way smoothly, without a sudden jerk. The water glass on this carton illustrates the smooth acceleration of materials on APC Conveyor. Fragile items, cartons with high centers of gravity, goods on overhead accumulation lines can be handled without danger of toppling.



### APC Conveyor Ends Carton Pile-Ups

Low line pressure with which APC operates adds a degree of safety for materials not attainable with any other type of power belt conveyor. Fragile items can be accumulated in line with heavy and durable materials, without danger of damage to cartons or contents from build-up of line pressure.

### Spaces Cartons Automatically

APC Conveyor gives you a vital safety feature for goods on the conveyor line, in negotiating curves and inclines without jam-ups. It spaces cartons automatically upon release from accumulation, without use of costly auxiliary equipment. It indexes cartons into case sealers, bottlers, or case-counting operations, avoiding pressures that are undesirable in these operations.

# Rapistan®

new ideas in materials handling

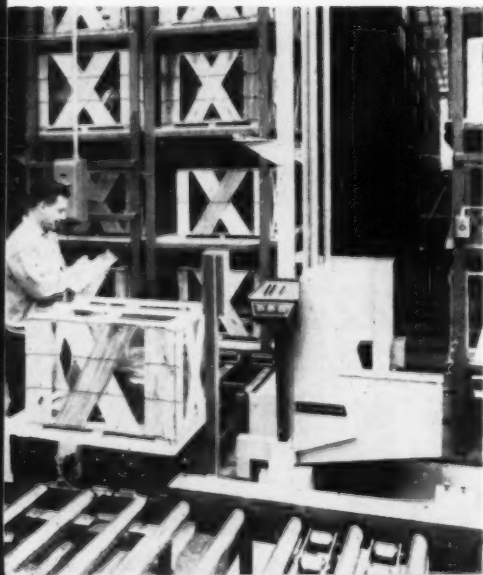
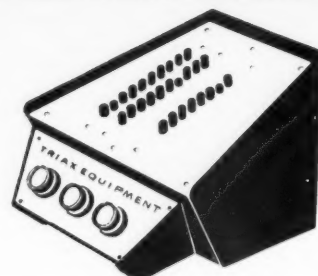
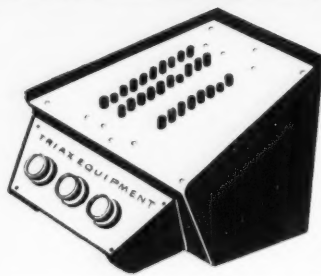
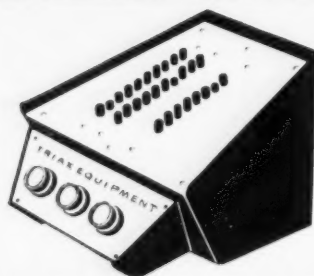
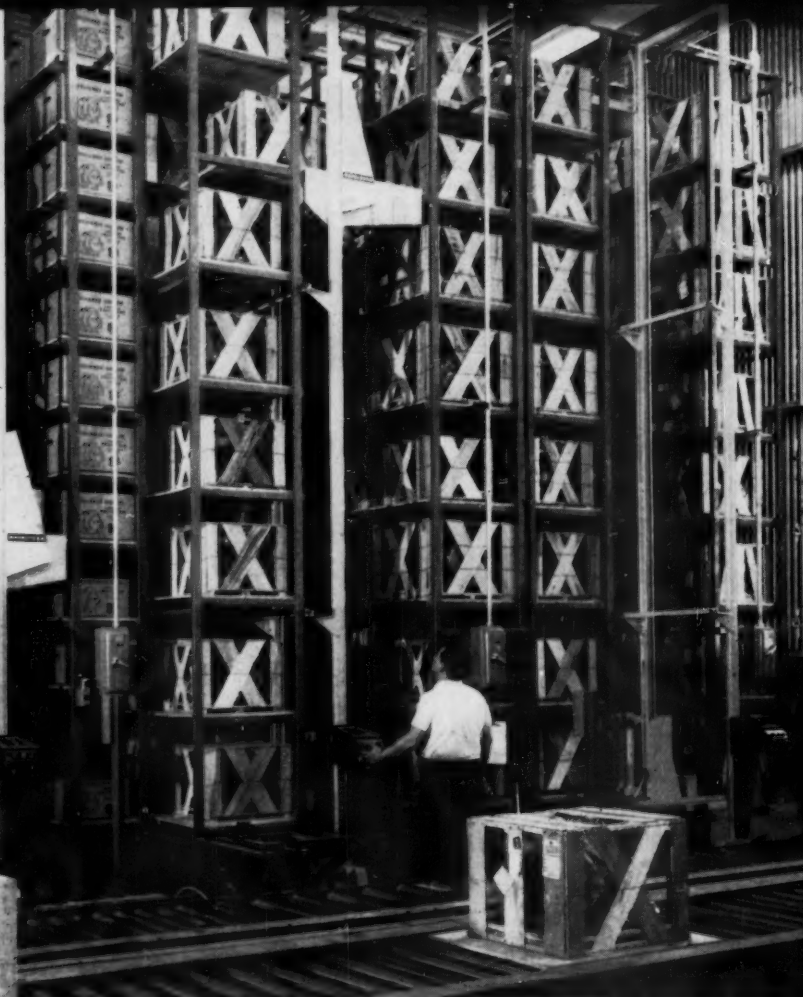
The RAPIDS-STANDARD CO., Inc.

555 Rapistan Building

Grand Rapids 2, Michigan

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**TRIAX Retriever Push-Key  
System Delivers Loads  
To Or From 4800 Openings  
At One-a-Minute Rate**



4800 COMPARTMENTS OF UP TO 1000 POUNDS CAPACITY EACH...at the finger-tip command of one operator for loading, unloading, and delivery to or from a central terminal point with precise selectivity. Packed into 5100 square feet of floor area. The new TRIAX TWO-WAY RETRIEVER SYSTEM... opening new dimensions in handling and storage efficiency and economy. Available in any size to fit your needs. Let us show you how Triax Retriever floor-to-ceiling automatic storage can help you save manpower, space, and expense.

CAPACITIES AVAILABLE FROM 100 TO 3500 POUNDS

**TRIAX EQUIPMENT**

3921 MAYFIELD ROAD

CLEVELAND 21, OHIO

EVERGREEN 2-2300

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## *Helps you beat the clock!*

This massive Gerlinger Fork Lift Truck is demonstrating a most important function in solving today's material handling problems.

It prevents costly delays by getting bulky materials into storage. It keeps heavy parts and products moving through all departments in time for scheduled production. It hustles big loads to platform, freight cars and trailers for on-time shipping. "Beating the clock" . . . preventing peak load tie-ups . . . is what husky Gerlinger fork lift trucks are *job-proved* to do best!

Let us send you latest on-the-job data. Ask for Certified Job Studies applying to your own business—and the new Gerlinger Specification Folder GSS. Write Towmotor Corporation, Cleveland 10, Ohio or Gerlinger Carrier Company, Dallas, Oregon.\*



**-GERLINGER**

LEADERS FOR 40 YEARS IN BUILDING  
FORK LIFT TRUCKS, CARRIERS AND TRACTORS

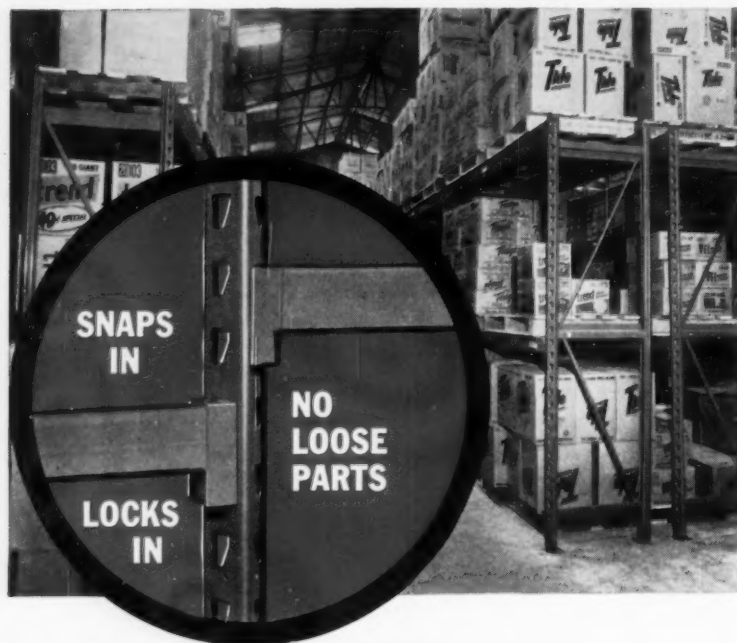
\*Gerlinger Carrier Co. is a subsidiary of Towmotor Corporation  
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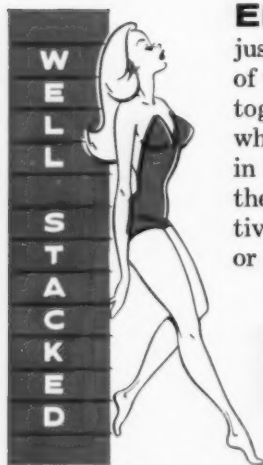
# Fast!

## EMI air-row head

### Fully Adjustable Pallet RACKS



- EASY TO ERECT
- ONLY 2 BASIC PARTS
- SIMPLE TO ADJUST
- QUICK TO RELOCATE



**EMI AIR-ROW** Head Racks easily adjust to stack pallets, skids, dies and bulk of varying heights. Upright frames are tied together with sturdy steel support beams which quickly snap into AIR-ROW slots in the vertical post. Forge lock fittings on the ends of the support beams insure positive self-locking engagement with no sway or pop-out.

WRITE FOR OUR COMPLETE CATALOG!

## EQUIPMENT

### MFG. INC.

21552 HOOVER ROAD • DETROIT 5, MICHIGAN

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## LETTERS to the EDITOR

### Congratulations from a VIP:

SIR:

Just a note to compliment you on the May issue.

Your editorials on the Material Handling man and the society made me burst the buttons on my shirt.

Congratulations!

J. W. "Wally" Hall  
Westinghouse Electric Corp.  
Newark, N. J.  
Past President, AMHS

*Coming from Wally, a real compliment.*

### Electric Front End Loader?

SIR:

We are interested in finding out whether or not there is a manufacturer in this country who produces an electric battery powered industrial truck equipped with a scoop. We have in mind a unit with capacity about 250 lbs.

We are not interested in fork lift trucks to which shovel or scoop attachments can be added as these would we feel bring the cost up beyond the limitations with which we are working.

Any information you can give us would be most sincerely appreciated.

Andrew H. Wolff  
Pegasus International Corp.  
New York, N. Y.

*Sorry, no help. We don't know of any company making this type of equipment.*

### Wants Fiber Glass Containers:

SIR:

Search of current issues of your MATERIAL HANDLING ENGINEERING magazine fails to reveal source information concerning manufacturers of fiber glass containers.

I am interested in obtaining information concerning a reusable

MATERIAL HANDLING ENGINEERING

**1-man  
1-engine operation  
11-ton capacity**



## **—give you full yard-handling coverage with the all-new BANTAM CR-350**

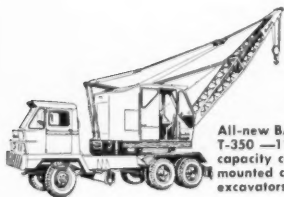
Big yards, small yards, open or congested yards—here's today's top-efficiency rig for low-cost yard handling whatever the problems!

Just note these facts on the all-new BANTAM CR-350: it's the compact, extremely maneuverable, 11-ton-capacity self-propelled that travels and works with just one man, one engine. Profit from its speedier handling over an infinite range of jobs: handling manufactured or bulk materials, loading, transporting, stockpiling, stacking, sorting, scrap-handling. It even does in-factory handling with gooseneck crane-boom . . . travels with loads up to 5½ tons!

The BANTAM CR-350—most advanced of all self-propelled—has such important features as automotive-type power steering . . . independent travel, swing and hoist . . . rapid travel speeds . . . new, optional 4 x 4 drive . . . separate forward-reverse clutch . . . full 360° swing . . . foolproof, all-weather mechanical controls . . . all-vision cab.

### **"LET US DRIVE OUT TO DEMONSTRATE!"**

See a BANTAM CR-350 perform at your own yard work . . . learn how fast it gets about spot to spot or yard to yard for lowest possible handling service. Mail coupon for demonstration or literature.



All-new BANTAM T-350—11-ton-capacity carrier-mounted crane-excavators.



All-new BANTAM C-350 crawler-mounted crane-excavators—capacity to eight tons.

**NEW...**—just-printed 12-page catalog on BANTAM CR-350 takes you through its more modern design step by step, shows what it will do and how it saves through actual picture coverage of all kinds of jobs. Check and mail coupon.



**SCHIELD Bantam Co.**

251 Park Street, Waverly, Iowa

- ☐ Please have BANTAM distributor contact me for a C-350 demonstration. MH-241  
☐ Send me new BANTAM CR-350 catalog. Also, catalog on:  
☐ BANTAM T-350, ☐ BANTAM C-350.

Name

Company

Address

City  Zone  State

*World's largest producer of truck crane-excavators*

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# NEW

## RAYMOND

# HEAVY-DUTY TRUCK

# Outperforms

## many counterbalanced trucks



**Performance never before possible!**

24 Volt

RAYMOND

Combining the operation of heavy counterbalanced trucks with narrow aisle trucks, the Raymond Heavy Duty outperforms many counterbalanced models and all narrow aisle equipment! Due to short length, combined steerable wheels and driving wheels, full 90° right angle turning and tiering is possible in aisles as narrow as 7½ feet. Result: more space for storage or production.

Two husky 24-volt motors power two large, steerable, all-gear drive wheels . . . produce positive power for long hauls, up ramps with full load, and for outdoor use . . . real power for rapid lift or lower. Four speeds forward or reverse. Two-wheel hydraulic brakes.

### The RAYMOND CORPORATION

3390 Madison Street,  
Greene, N. Y.  
Send Heavy Duty  
Truck Bulletin

NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

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### LETTERS TO THE EDITOR

(continued)

waterproof container that would be suitable for packaging miscellaneous materials for shipping to Down Range telemetry sites. Some of these sites are located in isolated places requiring lighterage. The containers used must be subject to salt water exposure and fairly rough handling.

Any information you can furnish on possible manufacturers of such a container will be greatly appreciated.

All of our management personnel find your magazine extremely interesting and helpful.

C. L. Perkins  
Pan American World Airways  
Patrick Air Force Base, Fla.

Reader Perkins has been referred to the *MHE DIRECTORY* for a complete list of manufacturers of this and all other material handling and packaging equipment.

### Do-It-Yourself Cushioning:

SIR:

We are interested in obtaining information and literature on the machine to "Make Your Own Cushioning Material." Picture of this material is on the bottom of page 91 of the May, 1959 issue of *MATERIAL HANDLING ENGINEERING*.

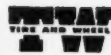
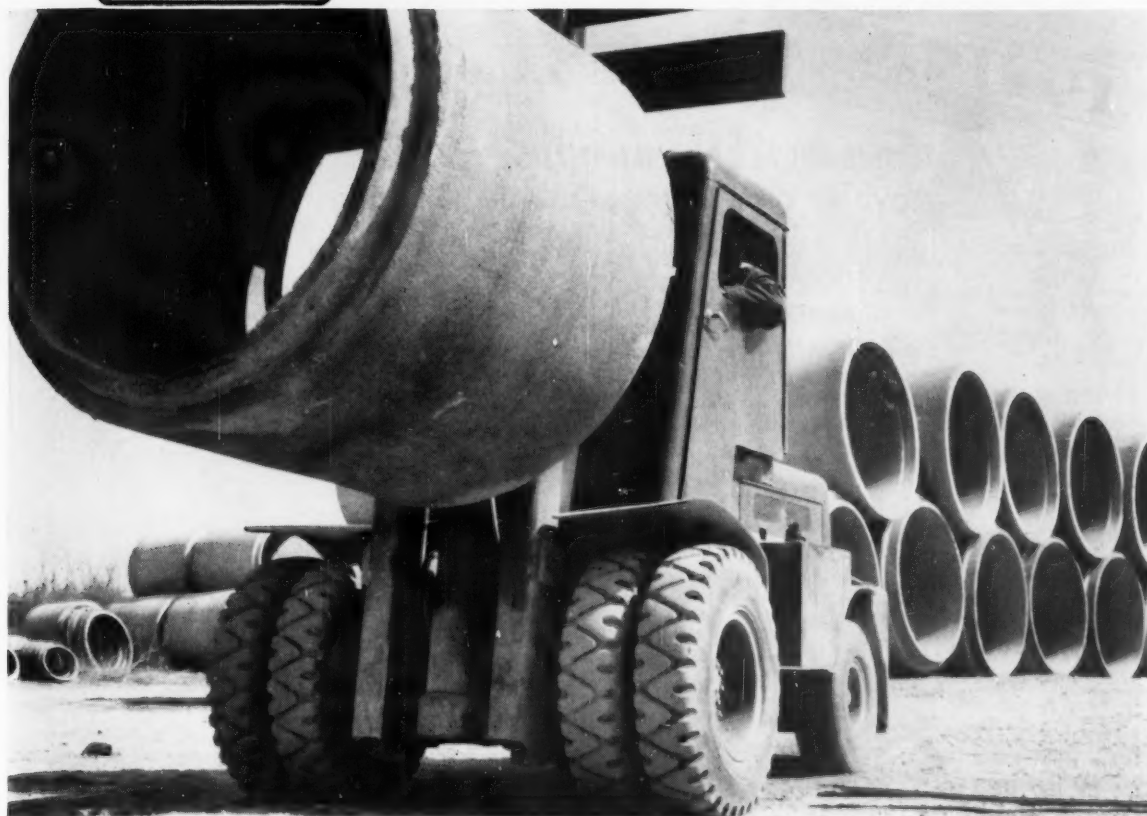
Will you please send us the name of the company manufacturing the machine to cut up the corrugated and process it to make cushioning pads.

Irving Johnson  
Binghamton Container Co., Inc.  
Binghamton, N. Y.

*This is typical of many letters received on this item. The information has been sent as requested.*

**MATERIAL HANDLING ENGINEERING** is always glad to hear from its readers and we'd appreciate your comments—both pro and con. Address your letters to: The Editor, **MATERIAL HANDLING ENGINEERING**, 812 Huron Road, Cleveland 15, Ohio.



**B.F. Goodrich****Analysis Man reports...**

## **B.F. Goodrich "Wired" tires give 5 times the service of other makes, still going strong!**

**Problem:** Lift truck tires used at Toledo Concrete Pipe Co. blew out 2 and 3 times a month, lasted only 6 months. The trouble was caused by scraps of wire reinforcing rods used in pipe construction. Tire and maintenance costs skyrocketed.

**Solution:** The B.F. Goodrich Tire and Wheel Analysis Man studied the company's complete materials handling setup—then recommended tires designed for this type of work: new B.F. Goodrich "Wired" tires. A special shield of steel wire mesh under the tread protects the tire body from punctures and blowouts.

**Results:** "B.F. Goodrich 'Wired' tires have been in use 2½ years and to date there have been no repairs," writes Plant Supt. Raymond L. Edwards. In addition, the company has saved 200% on tire costs.

This report is typical of the savings B.F. Goodrich TW Analysis Men can make for industrial tire users. Their services are without cost or obligation—their recommendations unbiased because B.F. Goodrich makes a complete line of industrial tires. To find out how you can save, mail the coupon today. A special consulting service is available to manufacturers of materials handling equipment.

The B.F. Goodrich Company  
Department TW-780, Akron 18, Ohio

I would like further information on your FREE TW Analysis.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_



Specify B.F. Goodrich  
tires when ordering  
new equipment

**Smileage!**

# **B.F. Goodrich industrial tires**

Circle 60 on Reader Service Card for more information

JULY, 1959

13

# MULKEY OR UTIL-A-V-E



Yes THERE IS, TOO, AN EASY WAY!  
MOVE "IT" ON A

**MULKEY OR  
UTIL-A-V-E**

FLOOR  
TO FLOOR!!

At last a sensible inexpensive portable floor to floor Conveyor! Enthusiastically accepted by the materials handling industry and especially adapted to industrial use. This tubular chain and flight conveyor is the answer to many material movement problems. Basic 16 ft. length extendable by 8 ft. sections up to 40 ft. in length. Ideal for floor to floor handling, car unloading, truck loading, package and carton movement as well as bulk material.

Lock Swivel Wheel Assembly is available as an accessory item at a nominal cost.

**HORIZONTAL**  
movement from...  
station to station in and out of cars, trucks, docks. Mobile wheels afford quick movement to and from point of use. Handles loads up to 400 lbs.

*Dealership Available!*  
Write direct for dealer discounts and details.

**SAM MULKEY CO.**

MANUFACTURERS OF PORTABLE CONVEYORS

DEPT. M.H.G., P.O. BOX 270, LEE'S SUMMIT, MO.

Circle 93 on Reader Service Card for more information

**LIGHT  
STURDY  
INEXPENSIVE  
VERSATILE**

E-X-T-E-N-D-A-B-L-E  
UP TO 40' AT 60° ANGLE



weigh  
and  
transfer  
with only  
**1** pickup

**DILLON**  
*Crane Scales*  
ARE LOWEST IN COST...

greatest value in scale field today!

Dillon portable crane scales combine weighing and load movement in *one operation*. Cut handling time over 50%. 100% MECHANICAL OPERATION. (No fluids to leak.) GUARANTEED ACCURACY TO WITHIN ONE DIVISION. Large 16" dia. dial, with red indicator, assures easy reading. No-flutter pointer registers instantly. TARE RESET compensates for weight of lifting slings, etc.

Dillon scales are constructed to withstand constant, rugged use. PROTECTED AGAINST ACCIDENTAL OVERLOADING AND SHOCK RECOIL. Unaffected by wide temperature variations. Strong plastic crystal covers the dial. HUSKY SWIVEL HOOK ROTATES 360° ON HEAVY-DUTY BALL BEARING.

Dillon crane scales are compact, economical and dependable. IDEAL FOR FACTORY BAY, YARD OR FIELD. Can't wear out under normal use. Quickly pay for themselves!

WRITE FOR FREE  
ILLUSTRATED  
CATALOG



Contains helpful price and weighing information. Gives detailed data on various capacities available.

**W.C. DILLON & Co., Inc.**

14568Q Keswick St., Van Nuys 8, Calif.

Circle 40 on Reader Service Card for more information

MATERIAL HANDLING ENGINEERING

## MEN IN THE NEWS

**At the Construction Machinery Div., Clark Equipment Co. . . . Parry Barnes** is sales



training manager. He will instruct company sales personnel and the sales personnel of "Michigan" distributors. Before joining Clark he was sales training instructor and special representative in the sales training and sales development divisions of Caterpillar Tractor Co.

**At Timken Roller Bearing Company's Steel and Tube Division . . . superintendent of the**



Conditioning Department is **Alfred B. Glossbrenner**. He joined Timken in 1949 as a foreman trainee in the Material Handling Department. He was made foreman in 1950 and was named assistant general foreman of the Bloom Conditioning Department in 1953. He was promoted to general foreman of that department in 1957.

**At Chisholm-Moore Hoist Div., Columbus McKinnon Chain Corp. . . . Joseph S. Becker** is sales representative and will cover the northern and eastern Ohio area.

**At Century Gas Equipment, Marvel - Schebler Products Div., Borg-Warner Corp. . . . western regional sales manager for the Century and Marvel LP-Gas carburetion equipment is Jack Crossman.** He will operate from headquarters in Lynwood, California.

**At Food Machinery and Chemical Corp., Packing Equipment Div. . . . Harry Harlich** is marketing engineer of the Materials Handling Section

and **Lee DeWent** is Eastern Seaboard District sales manager of the Materials Handling Section, Riverside, California.

**At Auto-Nailer Co. . . . district sales manager is James I. Ferris.** He will manage the company's sales representatives in Pennsylvania, upper New York and New England. Also, **Bernard Krueger**, former administrative aide to the Secretary of State of Illinois has been named regional manager. His territory covers southern Illinois and portions of Missouri and Iowa.

**At Greer Hydraulics, Inc. . . . Saul Wills** is airline equipment assistant chief engineer and **Lyman A. Bullard, Jr.** has been named manager, hydraulic valve and component sales of the Products Division.

**At Container Corporation of America . . . Howard E. Garland** is sales manager of the corrugated shipping container plant at Portland, Oregon.

**At Lamson Mobilift Corp. . . . the new eastern regional manager operating from Long Island City, N.Y. is**



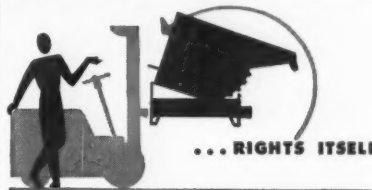
**Duncan E. Hill, Jr.** He will coordinate all sales and service by Lamson Mobilift dealers in the Eastern United States and Canada. He joined the firm in 1956 as a sales representative for the New York Branch.

**At Kran Co., Inc. . . . Jerry R. Gold** is district sales manager who will be responsible for sales in Texas and Louisiana.

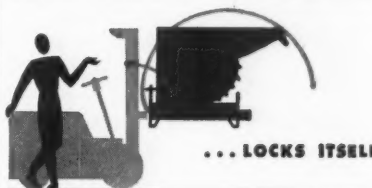
**At Hawkeye Products Corp. . . . area sales representative is Robert A. Shuey, Jr.** From Dallas headquarters he will cover Texas, eastern New Mexico, Louisiana and Oklahoma.



IT DUMPS ITSELF



... RIGHTS ITSELF



... LOCKS ITSELF

## How to cut scrap handling costs 50%

Here's the fastest, lowest cost method of scrap handling ever devised. Hundreds of industries are now using Roura Hoppers instead of barrels or tote boxes to collect scrap metal. They're placed alongside machines or in strategic locations. When full, lift truck operator picks up loaded hopper . . . transports it to scrap bin or freight car . . . flips the latch . . . and the hopper automatically dumps its load, rights itself, locks itself. Hopper is returned to its station and operator is free for other work.

Segregation of scrap is simple. Hoppers can be marked for copper, brass, stainless, etc. Brings higher prices.

Roura Hoppers are made in five sizes, 1/2 to 2 yard capacities. Sturdily built of 3/16" steel plate with continuous arc-welded seams. Also available in stainless steel or galvanized. Mounted on live skids or a choice of wheels. Standard models available for immediate shipment from stock.

Start cutting costs now . . . with Roura Hoppers. Remember . . . if it's as good as a Roura it IS a Roura.

# ROURA

Self-Dumping

# HOPPER

**HERE'S HOW** to get more details about Roura Self-Dumping Hoppers. Just attach this coupon to your letterhead . . . sign your name . . . and mail to . . .

**ROURA IRON WORKS, INC.**

1411 Woodland Ave., Detroit 11, Mich.

Circle 118 on Reader Service Card



## Some of Our Members Speak Up

by John Mount, President, SPHE



PERHAPS you would be interested to read what some of our members have to say when they write me. I have selected the following paragraphs as a cross-section of the response I received from my special bulletin #3 dated April 27th, which went to all members.

**"Let us now accept and act on the great challenge of SPHE's destiny with a renewed dedication, a vigorous and unwavering devotion to the principles for which the Society stands."**

**"You want ideas on a program to engender respect to our membership. I believe the only way this can be done, and it should be done fast, is (to have) a program of certification, similar to what is going on in most technical societies, as a must. Also a gradual stiffening of the requirements for Packaging Engineers should be started at once, with the idea of certifying to the ability of those members who want certification. However, the packaging certification should be all-inclusive, (covering) all phases of handling materials within a plant or in transit."**

**"I have sent in the renewal of my membership in SPHE. Possibly due to being located in this isolated area, I do not get a lot of benefit from this membership. . . . It is renewed in appreciation of the great amount of effort that you and others have made to build up and sustain a professional standing for Packaging and Handling Engineers. I hope this effort can**

**continue."**

**"I believe it would be possible to greatly enhance the contribution of the Society to the technical aspects of packaging and handling by having a publication such as the transactions of the ASME, only on a much smaller scale of course."**

**"I am a member of the . . . Chapter, and we, the same as most chapters, have been resting on our oars, awaiting the results of the possible merger. Now that the matter has been concluded, I think that every chapter should get on its toes and get down to work."**

**"I would like to comment on two aspects of our Organization which to my mind seem to weaken our structure and lessen the value of our association to its members. The first is the fact that we do not have rigid enough qualifications for membership in the Association. If we are to consider ourselves as a Society of Engineers, our membership should be composed predominantly of men who have either had an engineering degree or received certificates from packaging schools which would include Military Packaging Courses, or at least five to ten years' actual experience in Packaging in a supervisory capacity. Secondly, while I realize that it is important for suppliers of packaging materials to participate in some of our meetings, they should only be able to do so as Associate Members and then be limited in number to a nominal percentage of the general membership."**

Quite a varied number of opinions. But yet they seem to key in the thought of establishing high standards for our membership. It's worth considering.

CHICAGO—"Containers For The Task" was the subject of a recent meeting of the Illinois Chapter. Guest speakers were **F. L. George**, Santa Fe Railway, and **J. Larkin**, Aldens, Inc. The discussion included containers of all materials, from small hand-carried boxes to those large enough for Piggyback operation. The speakers emphasized safe packaging and handling techniques throughout industry.

COLUMBUS—Members of the Central Ohio Chapter heard **Arthur Ratner**, Rentar Corp., at their May meeting. Ratner described packaging, handling, and transportation of missiles here and abroad.

INDIANAPOLIS — **Mrs. Elaine Pitts**, packaging engineer, Sperry and Hutchinson Co., asked "What Makes a Good Warehouse?" at the last meeting of the Indianapolis Chapter. Drawing from her experience in the packaging and material handling field, Mrs. Pitts pointed out factors that make for good warehousing.

DENVER—A tour of the Martin-Denver Co. was a recent activity of the Denver Chapter. Members viewed test stands and inspected missile components. The March meeting was held at The Continental Can Co. A plant tour concluded this meeting.

PITTSBURGH—"How to Recognize and Assess a Material Handling Problem" was the title of a talk given to the Pittsburgh Chapter at a recent meeting. Speaker was **John J. Wilkenson** of the H. B. Maynard and Co. Wilkenson is a graduate of London University, has specialized in material handling and associated fields.



# **NEW ELPAR**

## **Model F-50T**

**with sharper  
turning...**

**20% faster speeds**

**...half the repairs**



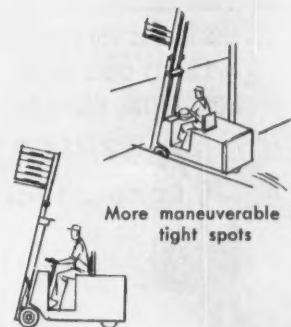
MODEL F-50T-  
4,000 TO 6,000 LB. CAPACITY

Now it's ready! An all new ELPAR electric fork truck for 4,000 to 6,000 lb. loads. It's tough and rugged, yet it will stack from an aisle a full foot narrower than before. Top speed is 8 MPH with lift speeds to 60 FPM.

A new carbon pile Acro-Smooth speed control is simplicity itself. Using a simple mechanical control linkage, it provides smooth, infinitely variable travel speeds and eliminates major maintenance items ... vulnerable speed contactors, master switches and resistance boxes.

Simplified hydraulics; removable electrical panel; center-sill unit construction; and removable dash board are just a few of the many "easy maintenance" features on the new F-50T.

Be sure you check its convenience and cost cutting potential yourself.



Faster lift and travel speeds

Write for further information  
on the F-50T... today!



ELECTRIC TRUCKS

THE **ELWELL-PARKER** ELECTRIC COMPANY  
ST. CLAIR AVENUE • CLEVELAND 3, OHIO  
In Canada: International Equipment Company, Ltd.

**TWICE THE LIFE... ONE-THIRD THE OPERATING COST**

Circle 43 on Reader Service Card for more information

**AMERICAN**  
*Safeway*

**PORTABLE ELEVATING TRUCKS**  
for any stacking job

From 46" to 130" lift



STANDARD  
MODELS  
priced from

**\$190<sup>00</sup>**  
to  
**\$855<sup>00</sup>**



Your crew can do twice the  
handling work for  
the same payroll cost

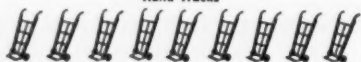
... and to take the heavy work  
and heavy costs out of  
HORIZONTAL HANDLING

**AMERICAN**  
**LOAD-JOCKEY**



... the new drive  
attachment for  
portable elevating trucks

MATERIALS-HANDLING DIVISION  
*The American Pulley Company*  
4200 Wissahickon Ave., Philadelphia 29, Pa.  
AMERICAN SAFEWAY TRUCKS—  
by the makers of the famous American Pressed-Steel  
Hand Trucks



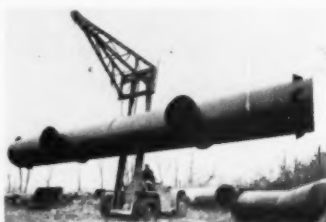
Circle 6 on Reader Service Card



**COST  
CUTTING IDEAS**

**\$ Lift Truck Boom  
Speeds Pipe Handling**

Installation of pipe in the new Torresdale Filtration Plant for the city of Philadelphia was speeded by the large pipe contractor, the Ambrose-Augusterfer Corp. They used a 16,500 pound capacity Yale & Towne pneumatic tire lift truck. The truck, ideal for un-



loading and storing bulky valves used on the job, was fitted with an easily mountable home made boom. It handled the main flow pipe sections. Utilizing a single wire rope sling, the truck with boom attachment lifted sections ranging up to 40 feet in length.

Circle 225 on Reader Service Card

**\$ Floor Pits Reduce  
Manual Handling**

Floor pits help reduce manual handling of metal scrap at Greenlee Brothers & Co., Rockford, Ill. machine tool manufacturers. In three machining departments, Roura self-dumping hoppers used for scrap collection, are placed in pits. Each pit holds four hoppers. A sign above each one indicates



which type of scrap goes into it. Scrap is brought from machines to the hoppers in wheelbarrows. Tops of the hoppers are at floor level. The wheelbarrows only have to be tilted to be emptied. Before, scrap was shoveled from wheelbarrows to hoppers. The hoppers are removed from the pits with a shop-built hook placed on the forks of a fork truck. The hook fits into hook-eyes welded to the sides of the hoppers. After the hopper is raised from the pit, the hook is removed so the truck can carry the hopper to the scrap bin in the usual way. Use of the self-dumping hoppers has reduced manual labor at the scrap bin. The fork truck operator raises the hopper to the top of the scrap pile. No manual shoveling is necessary.

Circle 226 on Reader Service Card

**\$ Spray Cans Speed  
Steel Drum Stenciling**

Steel drums are stenciled easily and quickly by many oil companies and distributors today with Reynolds Inks in aerosol cans.



The marking inks, available in nine colors, dry almost instantly and are weather and water-proof. The illustration is of a company operation that uses brass or oil board stencils in two parts, one for red lettering, one for blue. A small quantity of white paint is sometimes used to whiten the drum head when needed. The inks can be used for any kind of container, and for color coding and identification marking.

Circle 227 on Reader Service Card

MATERIAL HANDLING ENGINEERING



Pallet Racks with Catwalk



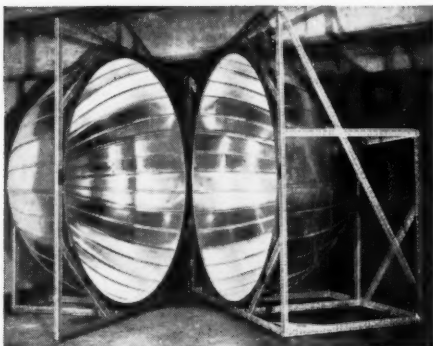
Automobile Display Rack



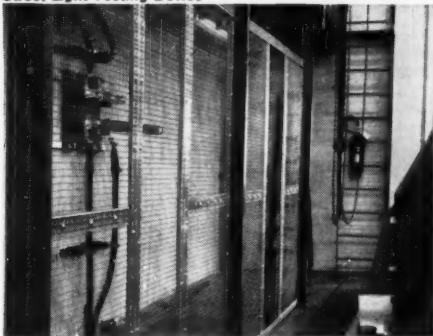
BUILD IT WITH **new**



**slotted angle**



Street Light Testing Device



Protective Barrier for Electrical Apparatus

### The Only Framing Material That Gives You Lock-Joints, Friction-Joints, and $\frac{3}{8}$ " Structural Bolts

Whether you need a common storage frame or an unusual piece of equipment, you can build it faster and more economically with new AIM Brand Slotted Angle. This versatile framing material features a new slot-and-hole bolting pattern that simplifies the assembling of all kinds of durable structures and equipment.

Two bolts fastened through round holes form a Lock-Joint for maximum strength and rigidity. The structural design of mezzanine floors, bar stock racks, etc., permits use of this joint.

Two bolts fastened through slots form a Friction-Joint. This type of joint provides normal rigidity and is used when the structural design of such day-to-day jobs as tables, shelving, etc., permits.  $\frac{3}{8}$ " diameter structural bolts, each with a safe-load capacity of 2000 pounds, are used for all connections.

Cold-rolled galvanized steel, AIM Brand Slotted Angle comes in two sizes: Standard 225-80 ( $2\frac{1}{4}$ " x  $1\frac{1}{2}$ " x .080") and Heavy-duty 300-104 ( $3$ " x  $1\frac{1}{2}$ " x .104"). Ten or twelve-foot lengths come in packages of 10 pieces with bolts and nuts.

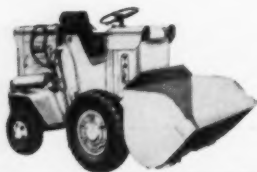
New AIM Brand Slotted Angle is a product of Acme Steel Company, U. S. pioneers in slotted angle framing material. Available nationally through local distributors or write: Dept. MJD-79, Fabricated Materials Division, Acme Steel Company, 135th Street and Perry Avenue, Chicago 27, Illinois.



**AIM Brand Slotted Angle**



Circle 1 on Reader Service Card for more information



THE INDUSTRIAL TRACTOR SHOVEL THAT

# COMPARE

## COMPARE YALE FOR POWER, ACTION, SAFETY, DESIGN.

Industrial plants from coast to coast—in Canada and Latin America—have accepted the Yale Industrial Tractor Shovel as the pacesetter of the field. Compare Yale's exclusive features and you'll understand why.

# POWER

## ONLY YALE GIVES YOU MATCHED TORQUE TRANSMISSION!

72-hp. 6-cylinder engine provides smooth power through matched torque converter and Yale torque transmission (fully automatic). One-speed range forward—one-speed range back. Inching control for delicate close-quarter maneuvering. Extra punch for impact loading. Accelerates to 13 mph. in 5½ seconds.

# ACTION

## ONLY YALE GIVES YOU A PERFORMANCE COMBINATION LIKE THIS!

2500-lb. carry capacity. Exclusive 45° bucket tipback permits faster loading and lowest carry position for faster transport with minimum spillage. 6' dumping clearance for dumping into bins and hoppers out of range of other—even larger—tractor shovels. Shortest turning radius—only 73".

# SAFETY

## ONLY YALE GIVES YOU BOTH THESE IMPORTANT SAFETY FEATURES!

Safety-curve lifting mechanism members never rise alongside the operator. Front and rear working lights give additional security.

# DESIGN

## ONLY YALE GIVES YOU THIS COMBINATION OF DESIGN FEATURES!

Rugged, simplified design! Sealed brakes and electrical system! Protected steering linkage! 10-ply tires! Whatever the job requirement—all these features add up to a more efficient performance at less cost—25% more work per hour. Full range of buckets and attachments available.

Leading companies throughout the country are productively using the Yale Industrial Tractor Shovel. Names on request.

For a demonstration in your plant or full data, contact your Yale representative. Or write The Yale & Towne Manufacturing Company, Yale Materials Handling Division, Philadelphia 15, Pennsylvania, Dept. YT-3H.



# SETS NEW PERFORMANCE STANDARDS FOR INDUSTRY



Yale Materials Handling Division, a Division of The Yale & Towne Manufacturing Company.  
**Manufacturing Plants:** Philadelphia, Pa., San Leandro, California, Forrest City, Arkansas.  
**Products:** Gasoline, Electric, Diesel and LP-Gas Industrial Lift Trucks • Worksavers  
Warehouses • Hand Trucks • Industrial Tractor Shovels • Hand, Air and Electric Hoists

Circle 145 on Reader Service Card for more information

## YALE®

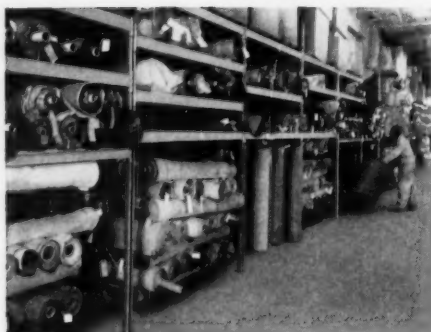
INDUSTRIAL LIFT TRUCKS  
TRACTOR SHOVELS • HOISTS

**YALE & TOWNE**

**you may spend more but you cannot  
get a better value than**

*American*  
**Slide-n-Lock  
adjustable  
STORAGE RACKS**

**because →**



"American" Stringers are one-piece . . . made of durable, continuous welded steel tubing, made from high carbon steel.

"American" Stringers have step construction for fast, simple conversion to decking . . . step is 1½" deep . . . thickness of finished 2" lumber.

"American" Posts are rugged . . . made from extra heavy gage steel . . . roll formed by special tooling.

"American" has positive double-wedging lock . . . safe-t-pin gives extra security against unhooking stringers.

"American" has smooth, aisle-side construction . . . no protrusions of any kind to tear clothes or create a safety hazard.

**because →**



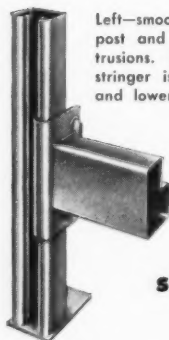
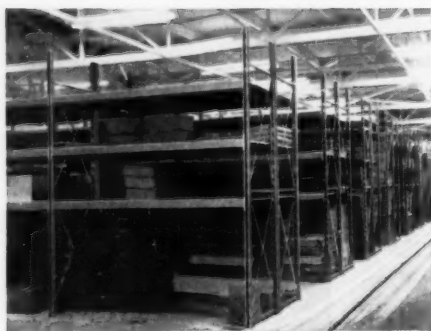
"American" has higher safety factors—2.25 to 1 — for greater protection to truck operators and merchandise.

"American" Racks are easy to erect . . . no costly bolting . . . all parts hook into place.

"American" Racks are easy to adjust . . . all stringers can be moved independently of any other part.

"American" Upright Frames are cross braced against sway . . . turnbuckles provide ready take-up for uneven floors.

**because →**



Left—smooth line construction of aisle side of post and stringer eliminates hazardous protrusions. Right—note rigid connection when stringer is "locked" to post. Stringers raise and lower like a window.



**send for catalog**

**AMERICAN METAL PRODUCTS COMPANY  
STORAGE RACK DIVISION**

5961 Linsdale Ave. **amp**® Detroit 4, Michigan

Circle 12 on Reader Service Card for more information

**MATERIAL HANDLING ENGINEERING**

# CASE *Utility* LOADER

## Quick-change Handyman

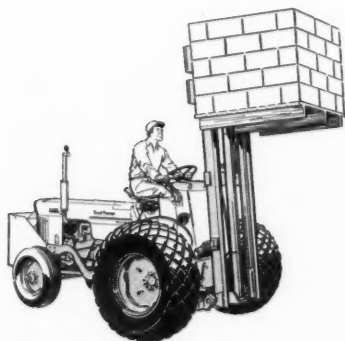


**Work-and-run rig cuts investment, fills in during peaks and breakdowns, does yard work, too**

In 5 minutes, you can switch loader-arm attachments on mobile Case 210B *Utility* Loader to adapt to all sorts of material handling. "210B" lifts and carries up to 1,000 lbs. . . bulk materials, pallet loads or odd-sized packages . . . also tows trailers and skids. It represents a key work tool at a low investment . . . keeps your work on schedule . . . also fills-in for larger or specialized machines during peak periods or breakdowns.

Easy-to-change attachments include 11, 13-cu. ft., or  $\frac{3}{4}$ -cu. yd. buckets, pallet fork with adjustable tines, crane boom and 6' dozer blade. Complete line of tools available for ground maintenance, mowing, sweeping, snow removal and other road and yard chores.

Ask your Case Dealer to arrange a demonstration — at no obligation to you — on work of your choice. Send coupon for free details.



### 310B Fork Lift

On indoor-outdoor work, gasoline-powered Case 310B *Utility* Fork Lift handles 4,000 lbs. to 15', 2,500 lbs. to 21½'. 18 mph speed cuts non-productive travel time. Power steer and synchronized shuttle transmission (standard) make maneuvering easy and fast.

# CASE

J. I. CASE CO., RACINE, WIS.

**PALLET**

**BULK**

**PACKAGE**



### J. I. CASE CO.

Dept. G1609, Racine, Wis.

Send complete free details on Case 210B *Utility* tractor and attachments.

Name .....

Position .....

Company .....

Address .....

City .....

State .....

CU-L-133

Circle 107 on Reader Service Card for more information



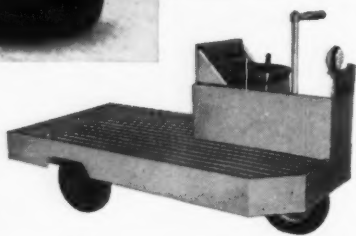
**MODEL F-40 Torque converter drive.** No shifting, smooth starts. This is a big rugged 4000 lb. capacity unit that delivers heavy duty service as a freight carrier, shuttle truck, long stock transporter, and to give mobility to equipment and personnel. 28 sq. ft. deck area.

### PRIME-MOVER

Prime-Mover transporters are marketed by industrial truck distributors. Ask there or write: Prime-Mover Co., Muscatine, Iowa.

## NEW TRANSPORTER IN TWO SIZES

1000 lb. & 4000 lb.  
CAPACITIES



**MODEL F-10 A 1000 lb. capacity truck.** Carries cartons, long stock, mixed freight, maintenance supplies, baggage, fire equipment. Ideal for foremen, superintendents, inspectors, supervisors. 18 sq. ft. deck area. Wisconsin engine. Industrial type combination transmission. Price: \$880 manual start; \$996 electric start. F.O.B. Muscatine, Iowa.

Circle 87 on Reader Service Card

## MASTER HAND TRUCKS

*light as a feather...  
strong as an OX*

They're lighter, more rugged, and balanced for fast loading. Constructed of 1" chromolly tubing and hi-tensile steel toe plate. Dealers inquiries invited. Send for catalog today.

**BOTTLERS' SPECIAL**  
SEMI-PNEUMATIC \$16.95  
PNEUMATIC \$23.35



**BEER and LIQUOR**  
SEMI-PNEUMATIC \$17.45  
PNEUMATIC \$23.84



**UTILITY TRUCK**  
SEMI-PNEUMATIC \$17.45  
PNEUMATIC \$23.84



P. O. Box 5146 • Dallas, Texas • Riverside 7-2441

## GRIPPER® woven wire SLINGS

here's SAFETY for any lifting job

No weak links to break . . . no thin strands to snap . . . no soft core to rot . . . nothing to tear suddenly and drop the load. That's the safety story of Gripper Slings. Spiral wire construction also gives the Gripper Sling complete flexibility to hold any sized load in a firm, yet gentle, grip. And, Gripper Sling's smooth, broad bearing surface won't cut or score stock . . . practically eliminates load damage.

Gripper Slings, pretested to meet load specifications are available in standard lengths and widths with capacities up to 100,000 lbs. Special sizes, alloys or Neoprene or PVC covered slings available. Write for FREE CATALOG and name of your nearest materials handling distributor.



**The Cambridge  
Wire Cloth Co.**

Department W • Cambridge 7, Md.



Circle 25 on Reader Service Card for more information



# NEW

from **HYSTER**



*Challenger*  
**100 120**

**the industry's first lift truck designed specifically  
for FAST, LOW-COST HANDLING OF 10,000 to 12,000 LB. LOADS**

The all-new Hyster Challenger 100/120 gives you maneuverability, lift speed, and easy driveability that mean new economy in handling loads of 10,000 to 12,000 lbs. Because it is the first truck ever to be engineered "from the ground up" for this capacity range, it offers performance and work capability never before available.

If you can profit from more efficient handling of 10,000 lb. to 12,000 lb. loads, it will pay you to contact your Hyster dealer now, or write for descriptive brochure.

#### **Advanced design for high performance**

- Dual Range Power Shift Hystamatic Transmission.
- Power Steering — short turning radius.
- Functional "human engineered" design by Henry Dreyfuss.
- Full selection of Options and Attachments.



**HYSTER COMPANY**

INDUSTRIAL TRUCK DIVISION, P. O. BOX 847, DANVILLE, ILLINOIS  
 FACTORIES: Portland, Oregon • Danville, Illinois • Peoria, Illinois • Kewanee, Illinois • Glasgow, Scotland  
 Nijmegen, The Netherlands • Sao Paulo, Brazil • Sydney, Australia (licensee)

Circle 73 on Reader Service Card for more information



## NEWS ABOUT AMHS

### Latest Merger News

*The following statement from President Frank LaTour refers to the negotiations which had been pending concerning a merger between AMHS and SPHE:*

Since the January directors' meeting your officers have worked diligently to resolve the obstacles in the way of a merger with SPHE. The legal study completed by our lawyer indicated that the laws of Delaware and Illinois in which our two societies are incorporated did not permit the legal merger as such. However, the same effect would be realized most easily by one society disbanding while the other society changed its name to MHPS in the same state in which it is incorporated. For several reasons it appeared the new society should be incorporated in Delaware. Your president wrote to John Mount (SPHE president) regarding our merger by the above method with the statement that our society would abide by all of the agreements of the Joint Merger Committee except, obviously, the state of incorporation.

At a meeting of their (the SPHE) executive board in Chicago on April 16 they rejected this method of merging. Their principal fear from the very beginning of this round of merger negotiations has been that their group would be swallowed up by the AMHS and lose their identity. Despite our confirmed statements that we would join into one society as equals, they have decided to employ a new managing director and attempt to build up their group again.

We, in turn, having done all in our power to bring about this merger, must be equally aggressive in building up the packaging section of our society, and have, in effect, the most powerful and professional group of material handling and packaging engineers included in our membership.

### Narragansett Elects New Officers

**PAWTUCKET**—At the May meeting of the Narragansett Chapter, **William E. Harper**, industrial consultant for the Greater Providence Chamber of Commerce, was elected president. **Robert W. Stillwell** (Walco Handling Equipment Co. Inc.) was selected as secretary. Elected vice presidents were: **John G. Baker** (Collyer Insulated Wire Co.) and **Harold K. Ames** (Suburban Propane Gas Co.). Other results: executive committee man, **Andrew V. Dugan** (H. G. Davis Inc.); vice president, **Russell H. Valley** (Sayles Finishing Plants, Inc.); national director, **Lawrence B. Swift, Jr.** (Metals & Controls Corp.); vice president, **Edwin R. Davis** (Whitin Machine

Works); treasurer, **George A. Delbos, Jr.** (George A. Delbos Associates Inc.); executive committee man, **Joseph A. Kraatz** (J. A. Kraatz Co.).

### Election Returns from Cleveland

**Edward H. Leighton**, executive editor of MATERIAL HANDLING ENGINEERING, was elected president of the Cleveland Chapter. Leighton had previously served the chapter as national director, a position which will be filled by outgoing president **Paul Schreck**, vice president of Moto-Truc. **Joseph A. Sedlak**, management consultant, was elected vice president.



Scheduled to serve with Leighton are newly elected board members **Herman Maschmann** (General Electric), **Robert Brady** (McClland and Associates), **Frank McClimon** (Euclid Div., General Motors), and **Al Toscano** (American Greetings Corp.)

In the photograph, top row: **Harold Honroth**, treasurer; **Tom Goldsmith**, AMHS-MHI Technical Director; **Robert Brady**; **Al Toscano**; **Paul Schreck**. Bottom row: **Herman Maschmann**; **Ed Leighton**; **Frank McClimon**.

**Schenectady**—The Albany District Chapter heard **Commander Charles L. Loring**, Supply Corp., United States Navy, speak at the April meeting. Commander Loring spoke on the subject of "Modern Steel Handling in the Navy Shipyards." He outlined the stages in the Navy's progress in material handling, from one-at-a-time to mechanized operations. Commander Loring emphasized that the Navy needs and uses new handling procedures with every ship that goes into construction. The present age requires speed in handling the smallest item from supply ships to fighting ships.



## IT'S A FACT

Allis-Chalmers Lift Trucks

Save you More...

Make you More

## ...take the case of Jacob Ruppert Brewery, for example

Chief Machinist Charles Deshensky says, "Our fleet of 19 Allis-Chalmers lift trucks ran 10,500 hours before we took the first engine in for overhaul. Actually, we did it out of curiosity. We wanted to know what made a lift truck engine tick for 10,500 hours. We had never seen one go that long before." Results of the experience were:

- Wear on parts throughout — negligible
- Wear on sleeves — .0015" to .002"
- Wear on crankshaft — .001" to .0015"
- Bearings hardly worn; no play in wrist pins

After 11,000 hours, two more engines were overhauled. Total replacements for the three included gaskets, seals, rings (not oversize), valves and guides, and one wrist pin. Engines in the remaining 16 trucks still hadn't had an overhaul at the end of 11,000 hours. Performance like this illustrates the importance of the heavy-duty industrial engine used exclusively in Allis-Chalmers lift trucks.

The experience of the Ruppert Brewery is *factual proof* that Allis-Chalmers trucks can *save* you more because they require much less maintenance — *make* you more because they are on the job producing more of the time. Your Allis-Chalmers dealer will gladly give you other convincing facts about these trucks. Ask him for or send for Case Study No. 19 giving the complete, interesting story on how the Jacob Ruppert Brewery saves money with Allis-Chalmers lift trucks. Allis-Chalmers, Milwaukee 1, Wis.



Twelve Allis-Chalmers 3,000-lb lift trucks work two or three shifts daily, transferring palletized loads to the warehouse for storage or to the loading platform for shipment.



Seven Allis-Chalmers 4,000-lb lift trucks with side shifter and unloader attachments load semi's at the rate of a trailer load every 4 to 4½ minutes.



# ALLIS-CHALMERS

BH-94

Circle 3 on Reader Service Card for more information

JULY, 1959

Plan  
to stay  
ahead...  
**MODERNIZE!**

announcing the most significant hoist development in 25 years!

# NEW BALANCED P&H HEVI-LIFT ELECTRIC HOISTS

2,000 to 50,000 pound capacities

## What Is Balanced Design?

Balanced Design means that each part in the new P&H Hevi-Lift hoist has been balanced or matched with every other part for strength, temperature and performance characteristics. *There are no weak parts!* Each part is as strong and dependable as every other part.

As a result, in the new "Balanced Design" P&H Hevi-Lift, no single part is a limiting factor on overall hoist performance. Even under severe duty cycles, motor, gearing and brakes continue to function as designed without excess heating or abnormal wear. It is this unique balance of design and stability of performance that gives the new hoists their name — "Balanced Design P&H Hevi-Lifts."

What will new Balanced Design P&H Hevi-Lifts do for you? For one thing, you'll never again be plagued with petty hoist breakdowns that cost pennies to repair, but mean dollars in lost production. Simply stated, *the new Hevi-Lift will stand up longer under heavier duty cycles with less maintenance than any other hoist made today!*

a new concept  
in the application  
of power  
and control  
to hoisting  
operations

## Check These Features

The new Balanced Design P&H Hevi-Lifts are specifically built to provide the solution to every previously existing hoist operating and maintenance problem. For example, they feature: 1) Totally enclosed; weatherproof and dust-proof motor brakes and controls to eliminate maintenance worries, 2) Self-adjusting load brake with extra large linings, oil bath lubricated and cooled, that *never* requires tightening or tinkering, 3) Extra-large, leak-proof design gearcase, with all gears splash lubricated, 4) Lifetime lubrication of all components — there's not a single grease fitting on a Hevi-Lift, and no lubrication headache, 5) Extra-large low-pressure motor brake has only a short 1/32" stroke. There's no punishing hammer action, no pins, linkage or levers—and no need for cooling fans, 6) Alloy steel involute splined shafts and gears of machine tool quality for extra low tooth pressure, long life.

Get the whole story—see the complete line—in Bulletin H-55. Just clip the coupon on the other page and mail it in! Dept. 205, Harnischfeger Corp., Milwaukee 46, Wisconsin.



# DESIGN



Standard 3 ton,  
standard head-  
room, 2-speed  
Balanced Design  
Hevi-Lift with  
plain trolley.

tear out and  
mail this coupon  
today!



**HARNISCHFEGER**  
...quality and service for 75 years

Dept. 205-C  
**HARNISCHFEGER CORP.**  
Milwaukee 46, Wis.

I'm interested in new Balanced Design P&H Hevi-Lift Hoists!

- ☐ Please send me a copy of Bulletin H-55.  
☐ I'd like to discuss them with a sales engineer.

NAME.....

TITLE.....

COMPANY.....

ADDRESS.....

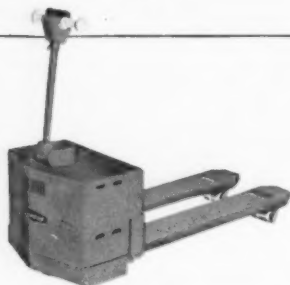
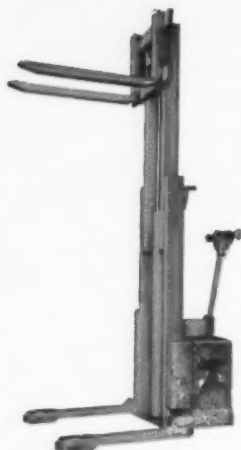
CITY..... STATE.....

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# **COST CUTTERS**

## **WALKIE PALLET STACKER**

Tiers 2,000 lb. pallet loads 10 ft. high from 6½ ft. aisles. 24 volt power. Three speeds forward or reverse. Low price includes batteries and charger.



## **WALKIE PALLET TRUCK**

24 VOLT POWER. Three speeds forward or reverse. Only 20½" longer than load. Low price includes batteries and charger. Capacity: 4,000 lbs.

## **LIGHTWEIGHT HYDRAULIC PALLET TRUCK**

Rugged, maneuverable. 270° turning radius. Reinforced handle. One-piece formed fork construction. Separate lift and lower foot pedals. Cap.: 2,000 and 3,000 lbs.



## **PORTABLE HYDRAULIC ELEVATING TABLE**

Positions work, supports long pieces, simplifies die handling. Convenient foot-pedal operation. Rotating top. Telescopic and non-telescopic models. Capacity: 2,000 lbs.



**MAIL THIS COUPON**

### **The RAYMOND CORPORATION**

3388 Madison St., Greene, N. Y.

Please send Bulletins on RAYMOND Equipment checked below:

- ☐ Walkie Pallet Stacker
- ☐ Walkie Pallet Truck
- ☐ Lightweight Pallet Truck
- ☐ Portable Elevating Table

NAME _____	TITLE _____
COMPANY _____	
STREET _____	
CITY _____	STATE _____

## **CALENDAR of EVENTS**

### **July 27-31**

Industrial Engineering Seminar  
American Management Association  
Colgate University  
Hamilton, N.Y.

### **September 14-16**

Material Handling Seminar  
American Management Association  
Chicago

### **September 14-18**

4th Annual Midwest Work Course on  
Plant Layout & Facilities Planning  
The University of Kansas Extension  
Center  
Kansas City 12, Kansas

### **September 21-23**

Packaging Seminar  
American Management Association

### **October 4-6**

Joint Industry Fall Meetings  
MHI, ITA, ALTAPEM, Monorail  
Manufacturers  
Lake Placid Club  
Lake Placid, N.Y.

### **October 10-13**

26th CEMA Annual Meeting  
Grand Hotel  
Point Clear, Alabama

### **October 14-16**

Warehousing Seminar  
American Management Association  
New York

### **November 3-5**

Eighth Canadian National Packaging  
Exposition  
Packaging Association of Canada  
Automotive Building  
Exhibition Grounds  
Toronto, Canada

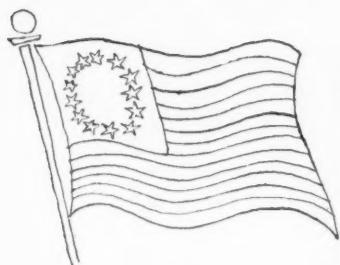
### **November 16-20**

ASME Automation Show & Confer-  
ence on Material Handling  
Trade Show Building  
New York

### **November 17-20**

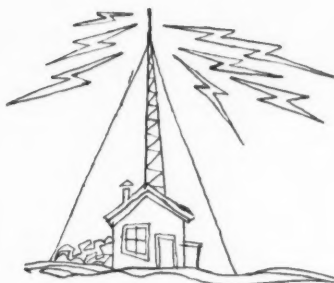
Packaging Machinery Manufacturers  
Institute Show  
New York Coliseum  
New York

# How many of these "firsts" do you know?



1. Which was the first of the original 13 States in the Union?

---



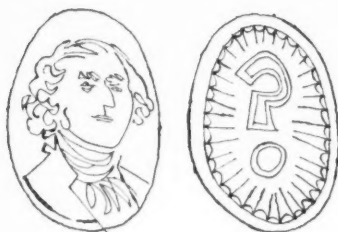
2. Where was the first commercial radio station in America?

---



3. What two countries signed the first World War II Peace Treaty?

---



4. Who was the first Vice President of the United States?

---



5. Who was the first man to knock out the Australian heavyweight George McScutcheon?

---



6. What is the No. 1 Wire Rope in America?

---

**Answers:** (1) Delaware, Dec. 7, 1787 (2) Pittsburgh, Station KDKA (3) Britain and Siam, Jan. 1, 1946 (4) John Adams, 1789-1797 (5) There is no Australian heavyweight George McScutcheon. (We didn't want you to get a perfect score.) (6) Tiger Brand.

## American Steel & Wire Division of United States Steel



Columbia-Geneva Steel, San Francisco, Pacific Coast Distributors  
Tennessee Coal & Iron, Fairfield, Alabama, Southern Distributors  
United States Steel Export Company, Distributors Abroad

Tiger Brand is America's No. 1 Wire Rope because: it is made by a company that maintains the most complete wire rope research and manufacturing facilities in the country. There are hundreds of different types of Tiger Brand Wire Rope, and every type is specially engineered to fit a specific job. This is why Tiger Brand has the *right rope for the job* . . . the rope that wears better and lasts longer.

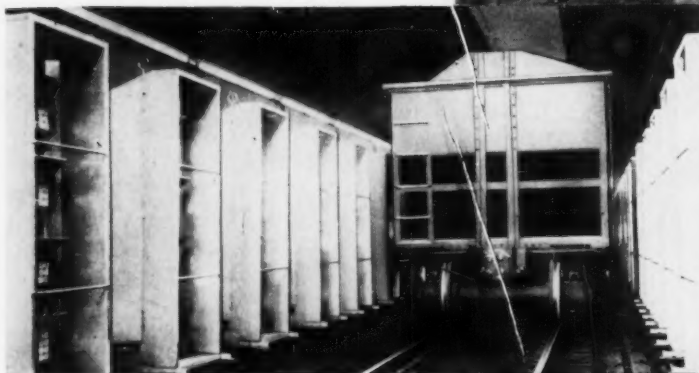
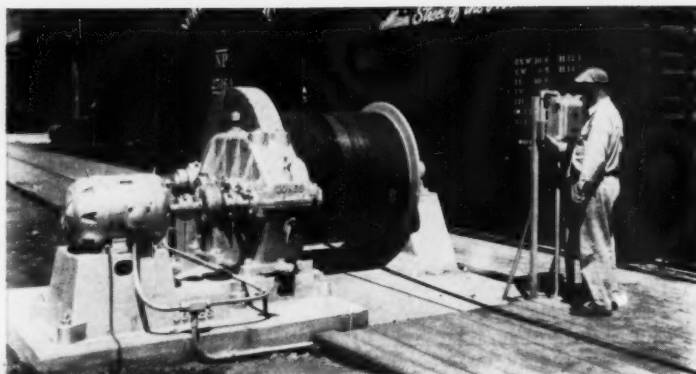
Tiger Brand Wire Rope is made by one company, U. S. Steel, that mines its own ore, makes its own steel, develops new and stronger types of steel, and maintains one of the country's largest staffs of wire rope engineers. Every step of production, from ore to finished product, is carefully controlled to guarantee the quality that has made Tiger Brand America's No. 1 Wire Rope. American Steel & Wire Division, 614 Superior Avenue, N.W., Cleveland 13, Ohio.

USS and Tiger Brand are registered trademarks

Circle 7 on Reader Service Card for more information

# 3 Ways to Unload Hopper Cars Faster

**1. SPOT THEM ACCURATELY WITH JONES CAR PULLERS.** Simple push-button control moves one or several cars safely in either direction, stops them in exact location desired.



**2. THAW THEM OUT WITH PERFECTION GAS-FIRED INFRA-RED EQUIPMENT.** Sold exclusively by Hewitt-Robins, Perfection car thawing equipment eliminates the dangers of torching and steaming, the high maintenance cost of pits, and the high operating costs of electric heating. Gas-fired infra-red is direct, safe, and economical.

**3. SPEED UNLOADING WITH H-R CAR SHAKEOUTS.** Lower shakeout onto the hopper car with its companion Robbins & Meyers hoist (another Hewitt-Robins exclusive) and press the button. Within minutes, the car is emptied broom-clean, safely, without hand labor.



Only Hewitt-Robins provides this complete hopper car unloading package—car pullers, thawing equipment, shakeouts, hoists. From preliminary investigation, through engineering and speci-

cations, to final installation . . . ask Hewitt-Robins to handle the entire job for you! Write Hewitt-Robins, Stamford, Connecticut, for Bulletin 7-12.



## HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES  
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

H-R Product Manufacturing Plants in Buffalo, N. Y. . . Chicago, Ill. . . King of Prussia, Pa. . . Passaic, N. J. . .  
Amsterdam, Holland . . . Johannesburg, South Africa . . . London, England . . . Montreal, Canada . . . Paris, France

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**MATERIAL HANDLING ENGINEERING**

Circle 32 on Reader Service Card ➔





## *Put this truck to work . . . without buying it!*

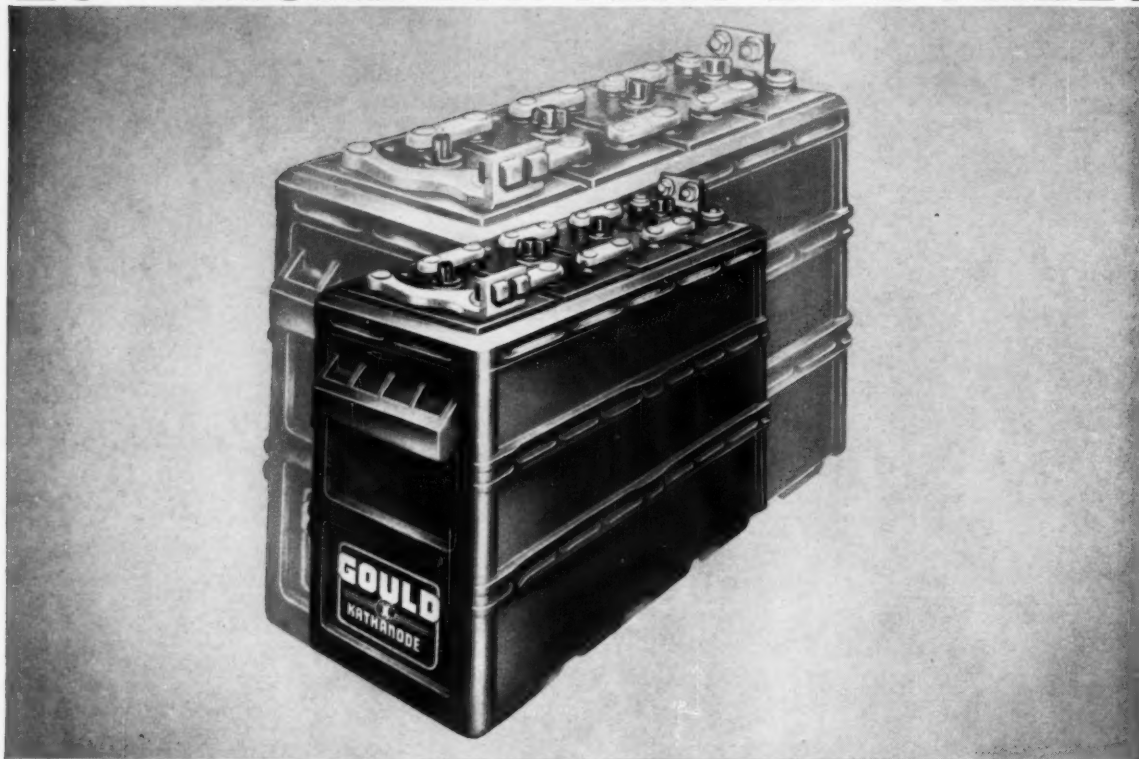
For many companies, even the savings resulting from the use of the *right* equipment is overshadowed by the capital investment necessary. The logical answer, in such a case, is to lease.

Without tying up a cent of working capital, the Clark Lease Plan permits you to select materials handling equipment from the world's *most* complete line. No down-payment or outside financing is necessary, and you have the added advantage of dealing directly with your local Clark dealer.

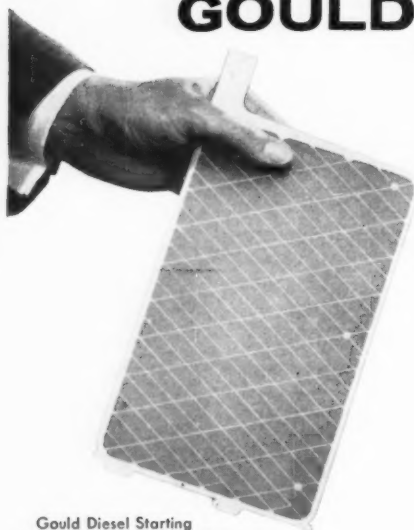
The savings the equipment brings are usually greater than the leasing rate. In fact, most users of the Lease Plan find the cost-cutting factors of using modern handling equipment *far outweigh* the modest monthly rates. For a detailed brochure giving full particulars of the Clark Lease Plan, simply write: Leasing, Clark Equipment Co., Battle Creek, Michigan.

**CLARK**  
**EQUIPMENT**

# 25% MORE BATTERY LIFE FREE!



## WITH THE NEW GOULD *SILCONIC* PLATE



Gould Diesel Starting Batteries with Silconic Plates resist corrosion, hold their charge and last longer.

Used in all diesel starting batteries, the Silconic Plate prevents grid corrosion, the most common cause of battery failure. Here's the principle: Gould introduces silver and cobalt into active materials of the positive plates. Silver and cobalt migrate to—and collect on—positive grid members, forming an insoluble oxide surface impervious to acid and oxygen attack. The longer the battery operates, the deeper the silver-cobalt penetrates into the grid metal, thus prolonging life. In applications where batteries are idle for periods of time, Gould's Silconic Plate prevents migration of materials to the negative plate, effectively reducing self-discharge within the cell.

For greater overall strength, arsenic is added to the antimonial alloy of the plate, resulting in an extremely dense, homogeneous grid free of flaws. This vital new physical and chemical strength—together with Gould's compact battery design—add up to the most advanced diesel starting battery you can buy. Write today or call your local Gould representative. He's listed under "Batteries Industrial" in the yellow pages. Gould-National Batteries, Inc., Trenton 7, N. J.

More Power to you from **gould**

Circle 62 on Reader Service Card for more information

MATERIAL HANDLING ENGINEERING



## How a Midwest Plant with Large Unpaved Area Keeps Material Handling Cost Down

A highly efficient plant in the Midwest finds they are getting good results by supplementing other material handling equipment with TL-6 TRACTOLOADERS\*. Six of them are used here.

In place of the bucket, five of these loaders are used with lift forks. With their pneumatic tires and big drive wheels, they can easily travel over rough, uneven ground. About  $\frac{3}{4}$  of the 135,000 sq ft of storage space in the yard of this plant is unpaved.

The superintendent says the TL-6's are faster than an overhead crane because they go anywhere, pick up and carry material to any destination; can even stack it to a 5-ft, 5 $\frac{1}{2}$ -in. height . . . also unload flat-bed trucks.

They are used for loads weighing up to 1,500

lb—handle lumber, tires, engines, oil drums, numerous other items. This plant stores over 1,000 different parts, 400 different castings, 1,000 different types of steel.

These machines also help inside the plant . . . are highly maneuverable with rear-wheel power steering—can turn from a 7 $\frac{1}{2}$ -ft aisle into a 6-ft doorway! Quickly and easily travel through narrow aisles, around posts and other obstacles.

In addition to the five TL-6's with lift forks, another TL-6 with a bucket is used by the maintenance department—for cleanup work, snow removal, transporting trash, many other jobs.

Let your Allis-Chalmers dealer show you how the TL-6 can help keep your material on the move and your cost down.

\*TRACTOLOADER is a registered Tractomotive trademark.

See our catalog in Sweet's Plant Engineering File.

**SOLD AND SERVICED BY YOUR ALLIS-CHALMERS DEALER**

### TRACTO—

a sure sign  
of modern design

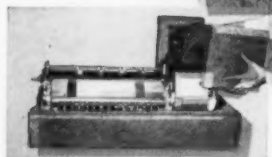
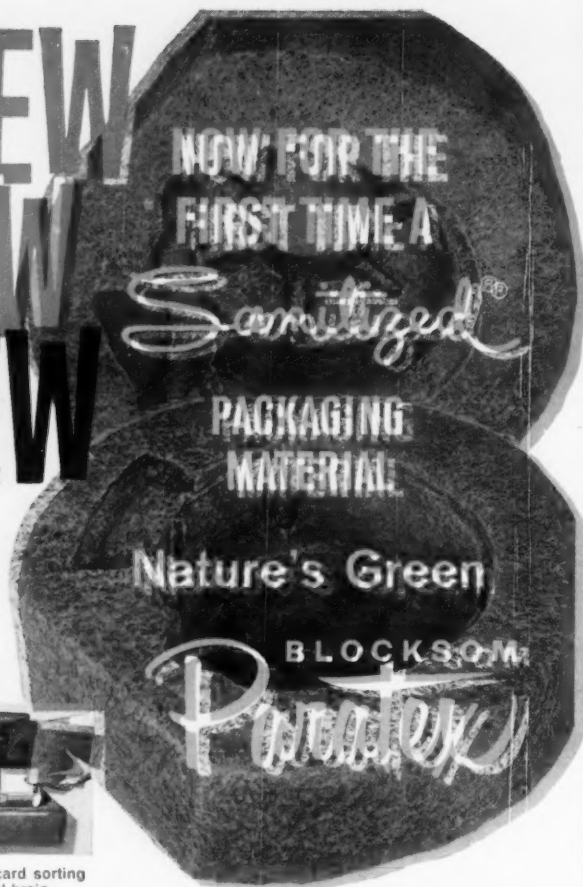
## TRACTOMOTIVE

TRACTOMOTIVE CORPORATION • DEERFIELD, ILLINOIS

TRACTOLOADERS • TRACTOSHOVELS • TRACTORIPPERS • TRACTOHOES • TRACTOSIDEBOOMS



**NEW  
NEW  
NEW**



Parametric Pack for card sorting unit of mechanical brain.

## WORLD'S FIRST SANITIZED CUSTOM CUSHIONING TO PROTECT YOUR PRODUCTS FROM MILDEW AND MOLD AS WELL AS SHOCK!

Now...protection for your products never possible before! Announcing nature's green Blocksom Paratex... Sanitized for sealed-in germ-proof protection. No matter where you ship, no matter what the humidity or temperature, it inhibits the growth of bacteria and organisms. Here at last is the packaging that protects your product from damaging growths and bacteria. Look for the pack that is Nature's Green. That tells you it's made from Blocksom's Sanitized Paratex.

A Parametric Paratex Pack meets all transit and storage needs. Whatever you ship...even the most delicate instrument...is safely cradled from damaging shock, vibration and other hazards of shipping. Made of latex impregnated curled hair, it has a "springiness" and a natural resilience for unsurpassed shock resistance. Lightweight and efficient at all temperatures.

Accordance with and complies with military specifications MIL-C-7769A; MIL-P-6064A and cushioning qualifications of MIL-C-4150D.

### Sanitized Paratex offers this protection:

- Inhibits growth of bacteria, germs, mold, mildew, fungi and rot
- Antiseptically and hygienically clean
- Prevents the development of odors
- Non-toxic, non-irritating
- Laboratory tested and approved

Write today for FREE information or consultation

### BLOCKSOM & COMPANY

Packaging Division  
MICHIGAN CITY, IND.  
Packaging Representatives  
in All Principal Cities

BLOCKSOM & COMPANY, PACKAGING DIV.  
Michigan City, Ind., Dept. MHE-7

- Send folder on Sanitized Paratex packaging
- Have packaging engineer call

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

Circle 21 on Reader Service Card for more information



ROLLS are stacked 5 high by new electric truck; old (left) gave 4.

## High Stack Uses Warehouse Space

A FLEET of 13 electric powered clamp trucks handles over 180,000 tons of newsprint annually at the Los Angeles Times-Mirror Co. The trucks stack the rolls of paper on end, 5 high. That's as high as the ceiling permits.

The rolls used to be stored on their sides, using dunnage. The job took 6 men, and the company figured paper damage at 1 percent.

As paper use grew, and as storage space ran short, the Times-Mirror bought its first Elwell-Parker electric-powered roll clamp truck. With it they stacked rolls on end. That increased storage capacity 50 percent.

The storage area used to hold 3,855 rolls on their sides. When they changed to four high on end, they got in 17,700 rolls.

Formerly, 2 men using hand trucks unloaded 18 rolls in 25 minutes. With the clamp truck, 1 man unloads 20 rolls in 10 minutes.

Later, a method of handling newsprint on skids was developed. It was started mainly to reduce paper damage between the mill and the user.

Elwell-Parker developed a clamp truck that can reach across the bed of a street truck without actually driving onto the truck's bed. A steel extension between the clamp and rotating unit increases the truck's outreach.

Damage has been reduced to an all time low of 0.005 percent.



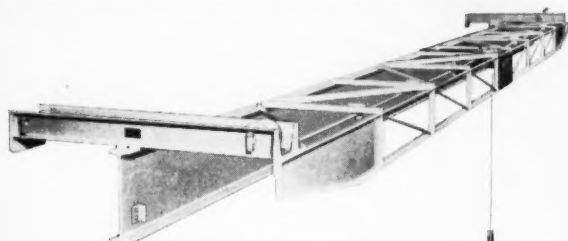
# BUY OR BUILD YOU SAVE WITH MMM CRANES

New economy, safety and load-handling efficiency can be yours with an MMM Crane. More than 70 years of crane-building experience is your assurance of the finest workmanship, materials and structural and operational features.

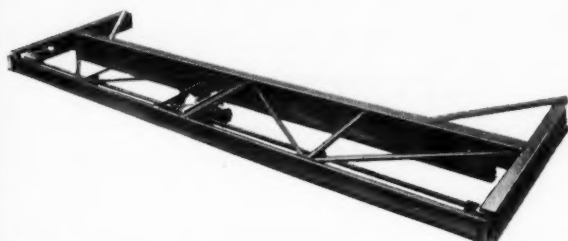
"Build-it-yourself" components are available to assemble bridges for cranes up to 10 tons and spans to 50 feet. Pre-engineered, highly standardized components for many other cranes we construct on order, reduce costs substantially for owners. Engineered to the job Shaw-Box Cranes, in various types and in capacities to 500 tons and more, are serving all kinds of industries.

Whatever your crane needs, we invite your inquiry. Ask for Bulletin 15025-1A.

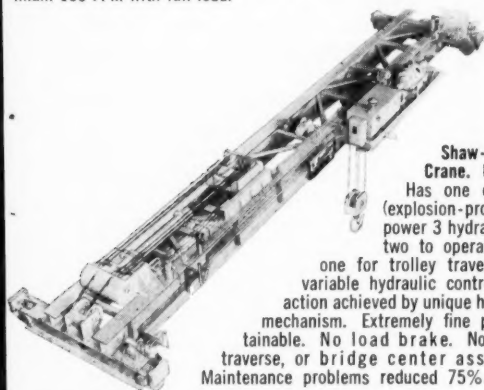
## ELECTRIC TRAVELING CRANES



**Type NE-SUH Load Lifter Crane.** Up to 10 tons, 50-foot span. Popular in paper mills, warehouses, structural plants to serve a main bay or local area. Single girder, underhung. Operates on straight or tapered I-beam flange. Available with transfer bridge. End trucks have 6-ft. wheel base. Wheels adjustable to fit 8" to 24" I-beams. "Shaw-Matic" bridge drive provides smooth, cushioned acceleration and braking. Safer, faster spotting action. Pendant push-button control. Three speeds. Maximum 150 FPM with full load.



**Type SBE Load Lifter Crane.** Up to 5 tons, spans to 40 feet. Widely used in side bays in machine shops, paper mills and other plants of moderate size. Single girder, top running. Pendant push-button control. Three speeds. Maximum 150 FPM with full load.

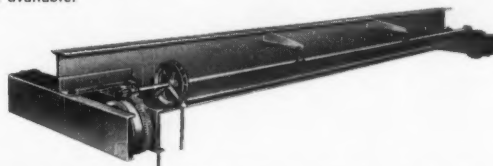


**Shaw-Box Hydraulic Crane.** Up to 10 tons. Has one electric motor (explosion-proof design) to power 3 hydraulic motors — two to operate the bridge, one for trolley traverse. Infinitely variable hydraulic control. Hoisting action achieved by unique hydraulic lifting mechanism. Extremely fine positioning obtainable. No load brake. No hoist, trolley traverse, or bridge center assembly gears. Maintenance problems reduced 75%.

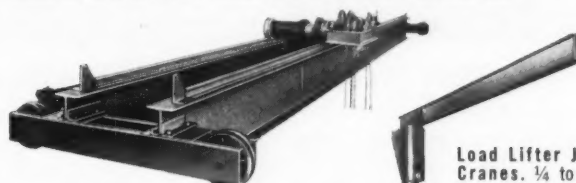
## HAND-OPERATED CRANES



**Type NH-SUH Load Lifter Crane.** Up to 10 tons, spans to 50 feet. "Build it yourself" components to construct a single girder, underhung crane bridge at low cost right in your plant. Standard components include two assembled end trucks with 6-foot wheel base and wheels that can be adjusted to fit 8" to 24" runway beams. Also provided are shaft bracket and couplings and bearing assemblies; chain wheel and guide and 20 foot hand chain. You buy I-beam and cross shaft locally — save freight costs. Suitable hand or electric hoist available.



**Type SBR Load Lifter Crane.** ½ to 10 tons, spans to 40 feet. Single girder, top running. Particularly useful for accurate manual "spotting" and where travel length is moderate. Suitable hand or electric hoist available.



**Type BR Load Lifter Crane.** 3 to 50 tons, spans to 60 feet. Double girder, top running. Widely used in power plants, pumping stations, stone crushing plants, and warehouses. Two lifting speeds. 28 to 37½ foot lifts. Geared to save energy. Fast acting load brake. Wire rope does not overlap on drum. No tail chains to hang and foul the load.



**Load Lifter Jib Cranes.** ¼ to 5 tons. Revolve smoothly through full circle on ball and roller bearings. No binding. Types that bolt to floor serve up to 550 sq. ft. Others set in concrete foundation; serve up to 1500 sq. ft.

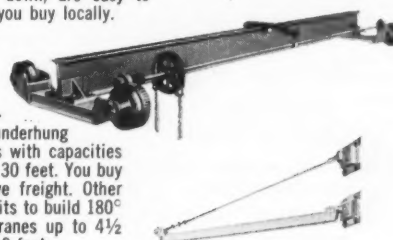


**Budget Bridge Drive.** Used to convert hand-operated cranes up to 10 tons to electrical operation at low cost. No drilling or machining. Push-button control. Crane travels at walking speed.



**Budget Gantry "A" Frame.** ½ and 2 tons. Caster equipped. For low cost mobile hoisting service anywhere in the work area. "A" frames come knocked down, are easy to assemble with I-beam you buy locally.

**Budget Crane Assemblies.** Low-cost "build it yourself" kits available to construct single girder underhung and top running cranes with capacities to 6 tons and spans to 30 feet. You buy I-beam locally and save freight. Other big money savers are kits to build 180° swinging bracket jib cranes up to 4½ tons with reach up to 10 feet.



59L-5



## OVERHEAD LOAD HANDLING EQUIPMENT

Products of

**MANNING, MAXWELL & MOORE, INC.**

Shaw-Box Crane & Hoist Division • Muskegon, Michigan

In Canada: Manning, Maxwell & Moore of Canada, Ltd., Galt, Ontario

Circle 83 on Reader Service Card for more information

# HANDLING 'ROUND THE COUNTRY



## Institute Presents Rose Bushes to Cleveland

Prior to the 1959 Exposition, representatives of the Material Handling Institute presented 59 rose bushes to the city of Cleveland. The gift was in appreciation of the city's cooperation during material handling expositions. Present during the ceremony were (left to right): **Paul Hurd**, commissioner of the Public Auditorium; **C. L. Fell**, vice president of American Monorail; **R. L. Fairbank**, vice president of Towmotor Corp.; **Ellen Terry**, Miss Red Rose of Cleveland; **L. West Shea**, managing director of MHI; **Mayor Anthony Celebrezze**; **Eugene Caldwell**, general manager of Baker Industrial Trucks; **R. W. Moody**, sales manager of Hyster Company's Domestic Industrial Truck Division.



## Military and Industry Meet, Talk Standardization

Recently the Armed Forces and industry representatives met in Washington to discuss standardization of material handling equipment. They agreed to start proceedings to find out the practicability of spare parts interchangeability in three major areas. The Joint Material Handling Equipment Advisory Committee assigned study projects covering wheel mountings to the Army and hydraulic systems and engines to the Navy. Industry representatives shown in the photo are, left to right: **Oswald S. Carliss** (Yale & Towne Mfg. Co.), **Richard T. Tiebout** (Yale & Towne Mfg. Co.), **Paul L. Brainard** (Hyster Co.), and **Richard M. Ervin** (Hyster Co.).

## Win MH Awards

Three students in the College of Engineering at The University of Michigan have won awards in a Material Handling Essay Contest sponsored by the Wunsch Foundation, Inc. First prize of \$300 went to **David E. Maguire** for his paper "Design of a Semi-Automated Zinc Casting and Amalgamating Department." **Anthony A. Plutynski** won second prize (\$75) winner with his essay on "Expendable Pallets and Other Solutions to the Shipping Cost Problem." Third place was won by **Diego J. Casanas**, writing on "Transportation of Petroleum."

## New Appointments

**Whitney S. Alger & Associates, Inc.** (Boston) have been named franchised sales representative for the **Automatic Transportation Co.** The company will handle sales and service for the eastern half of Massachusetts.

**The Construction Machinery Div., Clark Equipment Co.**, announces distributor changes. **Merts Equipment Co.** (Albany and Savannah, Ga.) now sells and services the "Michigan" line in six more counties: Treutlen, Emmanuel, Candler, Jenkins, Bulloch, and Screven. **Stith Equipment Co.** (Atlanta) now has Whitfield County. **Spreitzer, Inc.**, (Cedar Rapids, Iowa) has opened a branch office in Peoria, Illinois.

**Dura-Buket Div. of the National Oats Co.** announces that **Ohio Belting and Transmission Co.** will be stocking distributor for the Toledo territory. **Ohio Transmission Co.** has been appointed to the Columbus Territory.



## 3 MEN DO WORK OF 4, and cut material handling costs 15% *in switch to Michigan Tractor Shovels*

By equipping standard 16 cu ft Tractor Shovels with  $\frac{3}{4}$  yd buckets, Growers Fertilizer Co-operative, Lake Alfred, Florida, has cut handling costs 15 per cent.

Growers' problem had been a common one . . . how to put greater efficiency into a system where weighing, mixing, and truck loading all were completely automatic. Only in such Tractor Shovel operations as unloading box cars, storing material, and feeding hoppers could there be much improvement.

With this limitation, plant manager Ed Shores' first thought was to get bigger machines. It was about time to trade in his four old 15 cu ft Tractor Shovels anyhow. But an increase of even one size *range* would keep the Tractor Shovels from readily passing through aisles, box car doors, and among some of the 38 bins (which ranged from 40 to 500 tons in capacity).

Then, a different *make* of Tractor Shovel came to mind. This machine—a 16 cubic ft power shift-torque converter Michigan Model 12B—would help boost production simply by preventing

the end-of-shift fatigue that comes from constant clutching and declutching. Too, its extra cubic foot of capacity could up production—though only another 100 lbs or so per load.

That's when the key idea was born. Fertilizer is, after all, a relatively light material—the heaviest Growers Co-op handles weighs 110 lbs per cu ft. Perhaps the Michigan Model 12B could swing a bigger bucket, thought Mr. Shores. How about the standard Clark-built  $\frac{3}{4}$  yarder? Fully heaped, it would carry 2230 lbs—470 lbs (27%) more than could the 16 ft bucket. Yet, its load would be well under rig's lift-and-carry capacity of 3,000 lbs. And its extra width, 4 inches, would cause no maneuverability problems.

A three-day on-the-job trial resulted. Michigan and the  $\frac{3}{4}$  yd bucket performed "with highest honors." Loads weighed out at 2200 lbs or better. Each 40 ton box car was unloaded in about 1½ hours. Feeding the hopper from a stockpile 40 feet away, the 12B delivered 77 tons of fertilizer per 50-minute hour.

With the fatigue factor reduced, operator made more runs in a day.

Result . . . the Co-op ordered three new Michigans to replace the four old machines.

Today, the combination of eliminating one Tractor Shovel and getting more production from each machine has provided the company with an over-all cost saving of 15 per cent! Yearly output, with only 12 men, is up to 100,000 tons, 700 grades of fertilizer, per season.

Perhaps the Model 12B Michigan can give you similar economies. Test one in your plant for proof—using the size bucket, 6 to 27 cubic ft, which best fits your material, job conditions, and production needs. Write us to arrange the details.

Michigan is a registered trademark of  
**CLARK EQUIPMENT COMPANY**  
Construction Machinery Division



2445 Pipestone Road  
Benton Harbor 10, Michigan  
In Canada:  
Canadian Clark, Ltd.  
St. Thomas, Ontario

Circle 31 on Reader Service Card for more information



## USEFUL LITERATURE

### Brick Handling Facilitated:

Industrial Issue No. 24 of LIFT features the handling of unbaked bricks in a plant where workmen pile up skid loads of bricks from a conveyor. There are no fatigue-producing motions because a platform lift maintains elevation at the most convenient working level. Other main feature tells how machine feeding of lumber is speeded by a conveyor-decked platform lift. Further details on both installations are available.

*Globe Hoist Co.*

Circle 201 on Reader Service Card

### Can Your Material Handling Be Automated?

Automatic handling and separation of packaged goods may be accomplished in several ways. Standard equipment is available to distinguish between mixed units in continuous flow, as on a conveyor. You can obtain automatic counting, separation, inventory control. You can have separation by size, by code markings, by color, or by weight. Literature will help tell you which technique can benefit your operation. Custom designed units are available for special situations.

*Atronic Products Inc.*

Circle 202 on Reader Service Card

### A Pump For Every Purpose:

Four new 4-page brochures and two 2-page-units describe the company's complete line of internal gear rotary pumps. Each 4-page folder is color coded for one of the standard pump series: A, B, C, and D. Separate 2-page monographs are included for description of the steam jacketed Series E and for Series C and D in 200 and 300 gmp capacities. Literature has been prepared for easy reading.

*The Wayne Pump Co.*

Circle 203 on Reader Service Card

### Crane Increases Yard Storage:

First product of the company's newly created Material Handling Division is its "Go-Devil" tractor crane. Hydraulically controlled boom raises or lowers with fingertip control, from horizontal to 75 degrees. Boom extends and retracts hydraulically. A large sturdy platform makes it a hard-working mobile truck. Full, continuous rotating boom swings at speed of 3 rpm. Touch control, forward and reverse, provides maneuverability for cramped quarters. Model 20

RM2 has 2000 pound capacity; model 50 RM2, 5000 pounds. Full extension of the first model is 8 feet, 6 inches; of the larger model, 18 feet.

*Drott Mfg. Corp.*

Circle 204 on Reader Service Card

### Lightweight Ratchet Buckle:

Bulletin GL252 tells of the development of the company's ratchet buckle. Engineers worked to give it easy tensioning; tension obtainable; webbing take-up; one hand operation; retensioning ease; and safe release. It operates like a miniature winch. All stressed parts are made from steel, non-stressed parts of aluminum alloy.

*General Logistics*

*Div. of Aeroquip Corp.*

Circle 205 on Reader Service Card

### Portable Bagger Speeds Filling:

Model 134 portable bagger is the subject of a bulletin now available. The literature tells how the machine adjusts for bag size, fills bags quickly and easily, and places them in the carton.

*Anderson Bros. Mfg. Co.*

Circle 206 on Reader Service Card

### Cost Cutting With Monorail And Cranes

This 52-page booklet tells you how to plan an overhead material handling system. And gives you help in selecting

it. Typical installations are pictured in various industries, with cost cutting features pointed out. Included are aircraft, automotive, ceramics, chemical, fabricated metals, food processing, foundries and forging, machinery and equipment, maintenance and power house, paper, rubber, steel and wire, textiles, and woodworking. The manufacturer through more than 90 years of development and improvement of components offers a complete line of monorail and crane equipment. A must booklet that will help you cut production costs.

*The Loudon Machinery Co.*

Circle 207 on Reader Service Card

### Electric Powered Walkies:

"Walkies—What They Can and Can't Do" is a 4-page folder title. Descriptive information is given on 7 basic walkie types. Information is given on how to pick the best truck type for a given job. Recommendations are based on cost, weight, maneuverability, operator position, power requirements, travel speeds, and maintenance.

*The Moto-Truc Co.*

Circle 208 on Reader Service Card

### Tapes Have Construction Uses:

Here's an 8-page booklet on tapes which seal, mask, and mark. Provides selection and product data tables for 11 Scotch brand tapes. Also shows recommended procedures for application and surface preparation. Booklet P-GSC.

*Minnesota Mining and Mfg. Co.*

Circle 209 on Reader Service Card

### Hydraulic Lift Data:

The E-Z Lift catalog F-518 gives data on model selection and ordering. All battery operated models are equipped with large, heavy duty 12-volt battery. Battery operated models have built-in 8 amp battery charger with automatic taper control. Safety flow control valve regulates lowering speed and prevents sudden drop of load. All models have adjustable dual floor locks.

*Crown Controls Co., Inc.*

Circle 210 on Reader Service Card

### Overhead Conveyor Systems:

There's an R-W overhead conveying system to solve your specific material handling problem according to the com-

### AMA Book on Packaging

*Packaging Research: An Inventory.* By Spencer A. Larsen. 207 pages. AMA's Research Study #37. The first 145 pages are a bibliography of books, magazines, and magazine articles on all phases of packaging, listed by topics. Other chapters on current trends in packaging research, needs for future packaging research, and basic sources of packaging information. Author is Director of Materials Management Center, Wayne State University. \$4.00 a copy to AMA members, \$6.00 to non-members. Write to: American Management Association, Inc., 1515 Broadway, New York 36, N.Y.



# New King-Sized DUMPMASTER Automatically Collects and Hauls Up To 120 cu. yds. of Refuse per Trip



Shown above is the Dempster-Dumpmaster CA30-24DB model which has a capacity of 100 cubic yards of loose refuse material.



Shown above is the CA15-18DB which has a capacity of 72 cubic yards of loose refuse material.

## DEMPSTER BROTHERS' Newest Addition Cuts Waste Disposal Costs

The famous DEMPSTER-DUMPMASTER 24 DB now has a big brother in the CA60-30DB model. Like the original Dumpmaster, it automatically handles detachable containers in one through six cubic yard sizes. However, it can pick up a gross load of 6000 pounds as compared to the 24DB's 3000 pound capacity.

Another important difference in capacity—the new model can compact up to 120 cubic yards of loose refuse while the 24DB gets up to 100 cubic yards per trip. Like all Dumpmasters, the new 30DB has clearance arms for safety . . . they never pass the cab windows . . . can't injure the operator.

**Write today for FREE BROCHURE**

The Originator and Only Manufacturer of the

Patents Pending  
DEMPSTER BROTHERS  
Inc.

**DEMPSTER  
DUMPMASTER®**  
SYSTEMS



**Dept. F-7**

• **DEMPSTER BROTHERS** •

KNOXVILLE 17, TENN.

Circle 38 on Reader Service Card for more information

JULY, 1959

41



## CLEVELAND CONTAINERS

ECONOMICAL • EFFICIENT • DURABLE

A COMPLETE LINE designed for packaging and protecting both small and large products . . . Cleveland Containers and Tubing are made of high quality fibreboard which provides rigidity and strength . . . in 2 or 3-piece construction. All paper and composite types.

Can be lined for added protection . . . labeled with pre-printed wrappers, direct printing or plain color wraps.

Also, plugs, sleeves and caps for protection of internal and external threads.

WRITE for our latest Packaging Brochure.

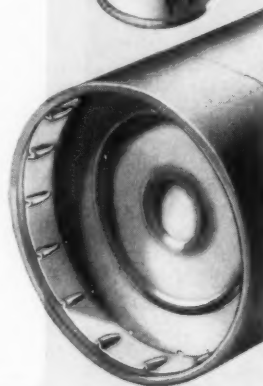
★ ★ ★

We also make TUBING of every kind, type and size, in diameters up to 24" . . . in wall thicknesses and lengths as desired, of chip-board, kraft, jute, fish paper, etc. as well as other electrical grades of tubing.

★ ★ ★

Why pay more?

For quality products . . . call CLEVELAND!



PLANTS & THE	SALES
SALES OFFICES:	OFFICES:
CLEVELAND	NEW YORK CITY
DETROIT	WASHINGTON, D. C.
CHICAGO	ROCHESTER, N. Y.
MEMPHIS	WEST HARTFORD, CONN.
LOS ANGELES	•
PLYMOUTH, WIS.	ABRASIVE
JAMESBURG, N. J.	DIVISION
FAIR LAWN, N. J.	AT
	CLEVELAND
<b>CLEVELAND CONTAINER CO.</b> 6201 BARBERTON AVE. • CLEVELAND 2, OHIO ALL-FIBRE CANS • COMBINATION METAL AND PAPER CANS • SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES. <b>CLEVELAND CONTAINER CANADA, LTD.</b> Plants and Sales Offices: TORONTO AND PRESCOTT, ONT. Sales Office: MONTREAL	

Circle 33 on Reader Service Card for more information

## ... USEFUL LITERATURE

pany. Literature describes various systems that can help you reduce overhead and operating costs, increase production, and realize a greater over-all profit. Detailed are monorail track, manual conveyor, package conveyor systems overhead automatic dispatch, and trolley track equipment.

*Richards-Wilcox Mfg. Co.*

Circle 211 on Reader Service Card

### Scaffold Caster Data:

Five series of scaffold casters are shown and described in Form No. 11659. All have simultaneous swivel and wheel locks to assure safe handling of mobile equipment. All have hardened double ball-bearing swivels. Brochure gives detailed information on 77 stem type and 72 plate-type casters, with load capacities of 175 to 1,500 pounds each. Scaffold casters are available in 5, 6, and 8-inch wheel sizes, with wide choice of hard and cushion treads.

*Faultless Caster Corp.*

Circle 212 on Reader Service Card

### Cost Saving Equipment:

Literature illustrates and describes the company's complete line of material handling equipment for industry. Various models of Cargotainers, conveyor guards, and pallets are included. A specifications chart gives complete detail on sizes, weights and capacities of Cargotainers. It serves as a guide for engineers to specify the right container for their requirements.

*Tri-State Engineering Co.*

Circle 213 on Reader Service Card

### Ideas for Shippers:

"Better Ways to Package, Unitize and Ship" is the title of a 48-page pocket-size booklet just off the press. It's full of ideas for improving packaging and shipping methods in all industries. Describes the complete Signode line of strapping, strapping tools, and accessories. Yours for the asking.

*Signode Steel Strapping Co.*

Circle 214 on Reader Service Card

### "4-in-1" Skid-Shovel:

Four different machines are at your fingertips in this Drott tractor loader. Basically it consists of a strong 2-segment bucket which can be positioned four ways. All you do is move a simple machine-selector lever, to get either a bulldozer, a scraper, a skid-shovel, or a clamshell. Change-over takes only a second or two, saving you hours of attachment change-over time. And you never have to leave the tractor seat. Catalog CR-6000-1 gives full information.

*International Harvester Co.*

Circle 215 on Reader Service Card

# Moto-Truc's "MAGIC CIRCLE" steering gives you high stacking stability ...with full 90° turns

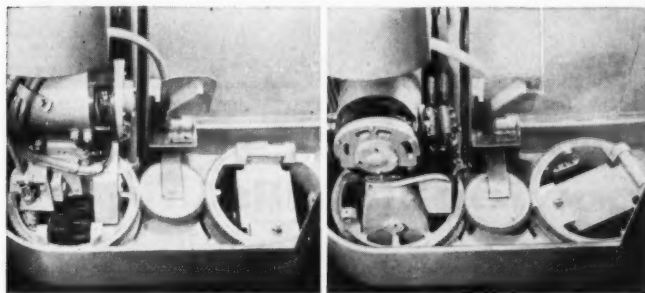


When you're stacking ceiling high, you want a truck that's stable as a rock. And, Moto-Truc's MAGIC CIRCLE steering gives it to you without sacrificing maneuverability or operator comfort.

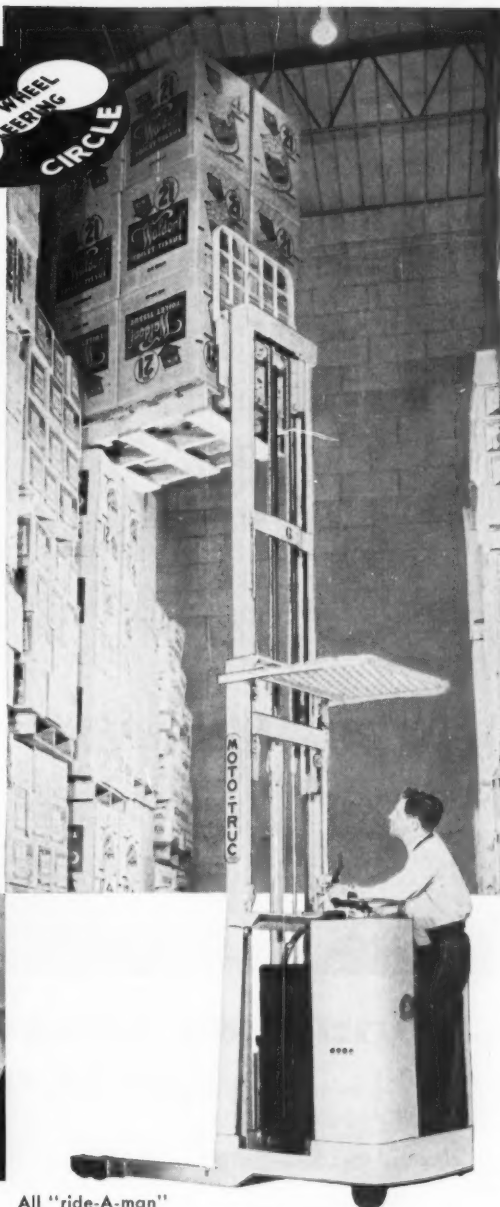
MAGIC CIRCLE steering provides solid four wheel support, plus turns up to 90° either side of center. There are no whipping casters to cause dangerous wobble or bucking...no complex steering linkage to up maintenance or restrict turning...and MAGIC CIRCLE steering assures perfect steering geometry.

This exclusive feature is just one more reason why MOTO-TRUC'S are your most economical materials handling buy.

## Here's How It Works...



Two wheels — one driving, the other free — are equipped with ring gears with an idler between them. By positioning the floating idler off center, the radius point of contact between idler and ring gears is always increasing on one wheel while decreasing on the other. Thus, both wheels must pivot around a common center maintaining perfect steering geometry.



All "ride-A-man" outrigger type Hi-Lift trucks are equipped with the exclusive MAGIC CIRCLE two wheel steering.



Largest Exclusive Manufacturers of "Walkie" and "Small Rider" Type Trucks

**The MOTO-TRUC Co.**

1955 E. 59th STREET • CLEVELAND 3, OHIO

Circle 92 on Reader Service Card for more information

JULY, 1959

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Case History 73

**RUBBER-TIRED WHEELS**

**90 DAYS**

**DISOWHEEL**

**ONE YEAR**

*(and still no sign of wear)*

**...and they save Rexall Drug \$4,000.00  
a year in floor repair bills!**

At Rexall Drug Company's midwest plant, rubber wheels "chunked" out due to heavy loads and tore away from the hubs in three months. A switch to steel wheels resulted in a \$3000-\$4000-a-year bill for floor repairs.

Then Rexall tested a set of Disowheels, the Disogrin-tired industrial truck wheels produced exclusively by Disogrin Industries.

The resilient Disowheels, thanks to their steel-like resistance to abrasion, had seen a full year's

service when the photo was taken. They are still in use today!—Needless to say, Rexall's midwest plant has long since installed Disowheels on all its pallet trucks.

*The Disowheel® tire of Disogrin® outlasts rubber and most synthetics many times over, takes bigger loads, won't damage floors, and cuts power consumption. Available in both pallet and press-on sizes. For a copy of our just released technical bulletin, write us today.*

 **ISOGRIN INDUSTRIES**

510 SOUTH FULTON AVENUE, MOUNT VERNON, NEW YORK

Offices in Los Angeles, Boston, Chicago, Detroit, Cleveland, Washington • Distributors everywhere

Circle 41 on Reader Service Card for more information

**MATERIAL HANDLING ENGINEERING**



# CATALOGS and BULLETINS

offered in advertisements in this publication

**Bags for Shipping . . .** Kraft bags can be used to replace conventional costly hand wrapping. They fill fast, stack snugly and squarely and cut handling and labor costs as much as 33 percent for some users. Booklet PE-111 lists many ways paper bags are cutting distribution costs for manufacturers. Union Bag-Camp Paper Corp.  
**Circle 137 on Reader Service Card**

**Stenciling System . . .** the Multistamp method of addressing virtually eliminates all errors in shipment addressing. The address printed directly on the carton becomes a permanent part of every shipment. A how-to and why book about this method is offered.  
**Circle 94 on Reader Service Card**

**Tubular Steel Stacking Racks . . .** handle loads up to 1200 lbs. Stack to almost any height with safety and rigidity. Fifteen basic rack sizes. All racks are four-way entry. C. E. Robinson Co.  
**Circle 115 on Reader Service Card**

**Explosion Proof Powered Lift Trucks . . .** Has explosion proof housings for the motors and controls so it can be safely used in explosion hazardous areas. Revolver Corp.  
**Circle 113 on Reader Service Card**

**Hoist Catalog . . .** Catalog 795 from Detroit Hoist and Machine Co. describes their complete line of electric and air hoists, monorail tractors, cab hoists and traveling cranes.  
**Circle 36 on Reader Service Card**

**Pulleys . . .** with the crown right in the steel are said to give better conveyor belt performance than expensive lathe-crowned pulleys. Sizes start at 3 inches in diameter. The Chantland Co.  
**Circle 29 on Reader Service Card**

**Collapsible Pallet Boxes . . .** handle up to 5000 lbs. Collapse when not in use and are quickly assembled. Bigelow-Garvey Lumber Co.  
**Circle 17 on Reader Service Card**

**Metal Process Belts . . .** fabricated from any metal capable of being formed into wire. These belts operate in temperatures from -50° to 2100° F. Ashworth Bros., Inc.  
**Circle 8 on Reader Service Card**

**Fast, Low-Cost Handling . . .** of loads from 10,000 to 12,000 lbs. is accomplished with the Hyster Challenger 100/120. It has such features as dual range power shift Hystamatic transmission, power steering, short turning radius, functional design with the operator in mind and a full selection of options and attachments.  
**Circle 73 on Reader Service Card**

**Facts About Freight Claim Losses . . .** due to improper marking methods is discussed in a booklet from Diagraph-Bradley Industries, Inc. It describes their method of marking using machine cut stencils.  
**Circle 146 on Reader Service Card**

**Build Your Own Crane . . .** Manning, Maxwell & Moore, Inc. offer low-cost kits for the construction of single girder underhung and top running cranes with capacities to 6 tons and spans to 30 feet.  
**Circle 83 on Reader Service Card**

**Pressed on Solid Tires . . .** by Goodyear has a tread designed for superior traction on ramps or wet, slippery surfaces. Treads are extra thick for better resilience and cushioning. Tougher compounds are used for minimum chipping and cutting.  
**Circle 61 on Reader Service Card**

**25% More Battery Life . . .** is claimed to be available through the use of the Gould batteries with siliconic plates. These plates prevent grid corrosion. They are said to be especially effective in reducing self-discharge within the cell in instances where the battery is idle for long periods of time.  
**Circle 62 on Reader Service Card**

**"The Modern Low Cost Way to Close Carton" . . .** is a booklet offered by International Staple & Machine Co.  
**Circle 76 on Reader Service Card**

**Reduce Rack Handling Costs . . .** with racks and Mansaver grabs. Style 1262 motor-driven rack grab with turntable for rotating loads can be used to handle rod, pipe, extrusions and other small objects handled in mass.  
**Circle 84 on Reader Service Card**

**Filament Tape . . .** holds up to 500 lbs. per inch of width, sticks and holds at a touch and comes off clean. Won't scratch or mar delicate surfaces and is safe for hands. Ideal for securing loose parts during shipment. Minnesota Mining & Mfg. Co.  
**Circle 90 on Reader Service Card**

**Selective Automatic Counting . . .** and sorting of mixed products are now possible with Atronic's 400 Series transistorized carton selector equipment. Your material handling can be completely modernized at low cost. Atronic Products, Inc.  
**Circle 9 on Reader Service Card**

**Light as a Feather Hand Trucks . . .** constructed of one inch chrommolly tubing and high tensile steel toe plate. Master Tank & Welding.  
**Circle 87 on Reader Service Card**

**Portable Floor-to-Floor Conveyor . . .** Tubular chain and flight conveyor comes in basic

Circle 84 on Reader Service Card for more information

## MANSAYER® GRABS

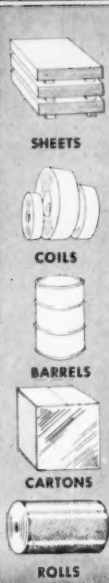
Handle Millions of Tons in Your Industry



### REDUCE RACK HANDLING COSTS

Rod, pipe, extrusions and other small objects handled in mass, can be handled most advantageously with racks and Mansaver Grabs. With the use of this motor-driven rack grab you can use the size rack best fitted for the volume to be handled. Racks of varying widths can be handled with the same grab. One, two, or three at a time are moved with fewer crane maneuvers from machine to machine or to storage, where they may be safely stacked high. Simple automatic grabs can be supplied when a small number of racks are handled. Mansaver can supply style 1262 with a motor-driven turntable for rotating loads.

Check Items You Handle, Send for Literature



## MANSAYER INDUSTRIES, INC.

3103 East St., New Haven, Conn.  
Also Manufactured in England

There's a right time  
for down-time!



### FOR DIRECT OR ALTERNATING CURRENT

Hobbs d-c Hour Meter tells when lubrication and other service functions are due on any equipment powered by internal combustion engine or battery-powered equipment. Hobbs a-c Hour Meter has a wide range of applications on any equipment powered by line current.

## Plan maintenance with **Hobbs** HOUR METERS

- Get information needed for on-time performance of planned maintenance — for superior performance and maximum utilization.
- Set up a sound basis for rental and leased equipment.
- Obtain operating time in hours and minutes — at a glance!
- A true timing instrument — not a revolution counter.

Distributors in Principal Cities  
WRITE FOR CATALOG 600



## John W. Hobbs Corporation

A Division of STEWART-WARNER CORPORATION  
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## CATALOGS & BULLETINS

(continued)

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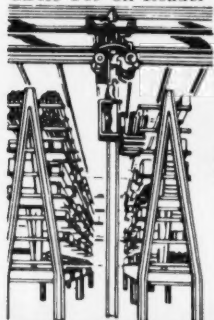
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JULY, 1959

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Look for this mark of Sterling quality.

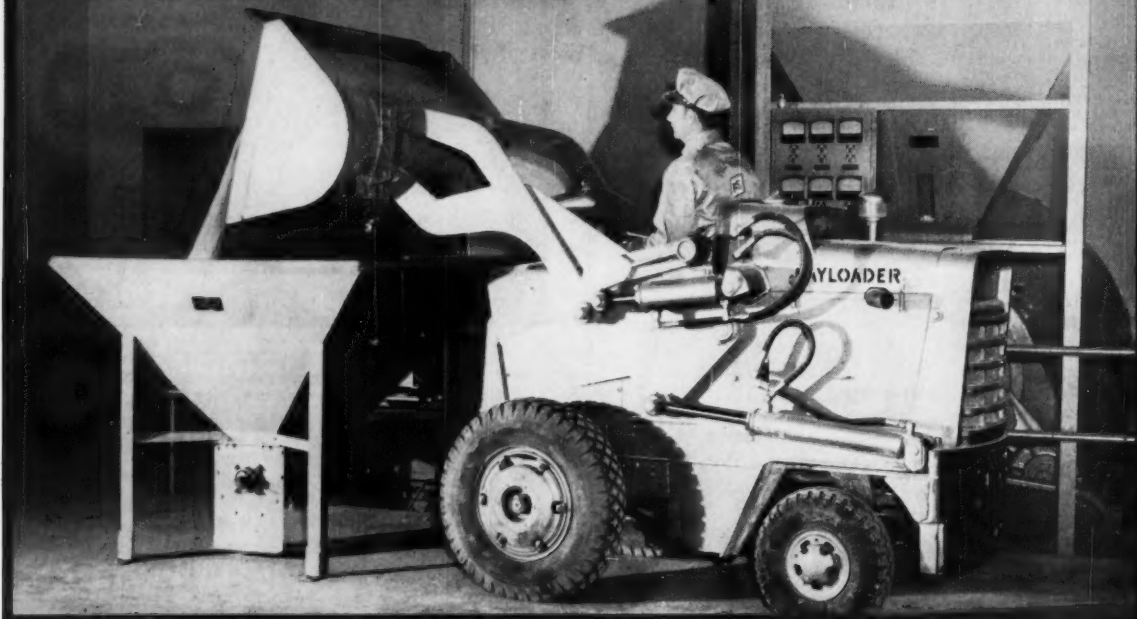
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A9-4812



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**Big Load Capacity** The model H-25 "PAYLOADER" tractor-shovel has a carry capacity of 2,500 lbs. — carries more for its weight than any machine in its class.

**More Digging Power** Breakout force of 4,500 lbs. is available at the bucket cutting edge — more than on any machine near its size. Exclusive power-transfer differential makes traction and "crowding" power more positive, especially when traction conditions are slippery.

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**Longer Life** The most complete system of protection has been engineered into the Model H-25 to insure long life and freedom from trouble: triple air cleaning system for the engine; cartridge-type filters for all three oil systems; self-adjusting, sealed hydraulic brakes; closed, pressure-controlled hydraulic system; grease and oil seals on all pivots and ball joints.

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7-A-1

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**MATERIAL HANDLING ENGINEERING**



### **What Do You Look Like?**

**You are a most interesting man.** You have been part of an industry since it began. Still you're not very old—in your forties. You have helped to elevate your chosen field from craft status to engineering stature. You have had a good education. Many other men look to you for guidance and direction. Your company counts on your advice at all levels. You earn enough to enjoy most luxuries. In short, you're a professional. And you read the professional's magazine, MATERIAL HANDLING ENGINEERING.

This, in broad strokes, is a composite sketch of today's material handling engineer. It was developed from statistics just released by John Fosdick Associates, research firm of New York. It's interesting, too, that this confirms data published by Case Institute of Technology just over a year ago.

Here are some of the details in the Fosdick report. Engineers in material handling are among the most educated of industry people. Fosdick found that 77 percent of our readers went to college. And, in that group, 72 percent of those with material handling engineering as a prime function earned degrees. Production and manufacturing engineers with degrees were next, with 52 percent, and then came corporate and management executives with 25 percent.

What are your responsibilities? Fosdick found that 98 percent of MHE's readers have company or plant-wide responsibilities for material handling engineering. (Two percent have departmental functions.) Further, 21 percent have 50 men or more reporting to them; 79 percent oversee work of up to 50 men.

Income of material handling engineers compares quite favorably with that of other engineering functions. Fosdick found that 60 percent of handling engineers earn more than \$10,000 annually. This is slightly better than the average salary paid to other kinds of engineers.

**To find what was needed** in education and training was the object of the industry-wide study made by Case Institute. Case reported that 67 percent of American and Canadian industry desired college training for handling and packaging men. Twenty-five percent of firms said college was a minimum requirement. The Case report said most companies assigned handling and packaging men to staff functions, supervision, standards, specifications, and design. They indicated that they need about three handling and packaging specialists per 1000 employees.

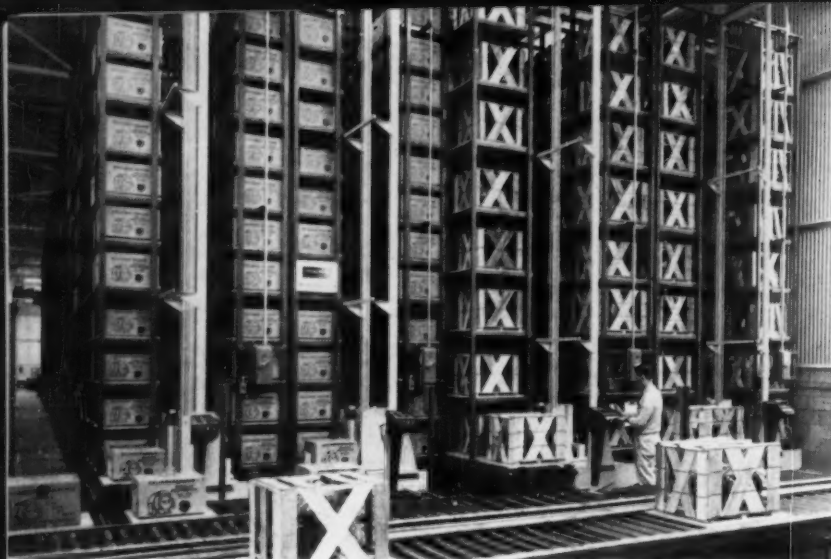
As to income, the Case data showed that starting salaries and those after 5 and 10 years' service compared well with pay of other kinds of engineers. The comment was made that some companies showed salaries that seemed to be well above average.

This study also found that needs for material handling and packaging men would increase their numbers by over 200 percent in the next five years. (Remember the report was made just a year ago.)

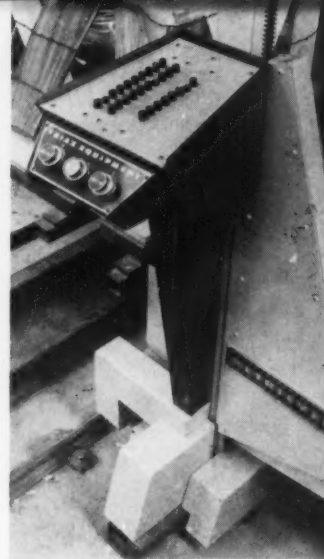
The conclusion is simple. A need for more men trained in the engineering aspects of handling and packaging has developed in the last decade. Industry will demand more engineering services in the years just ahead. MHE will continue to give its readers the engineering and management information they need. We think more colleges should plan along these lines by offering courses tailored to the material handling engineering needs of Industry.



**Executive Editor**



PUSHBUTTON storage racks are fed by roller and gravity conveyors in foreground. A mechanical transfer device puts a load onto the Retriever.



CONSOLE has simple arrangement of buttons for instant selection.

A random selection system gets motors into customers' hands in a big hurry as . . .

## Pushbutton Storage Expedites Deliveries

**W**HAT HAPPENS to a production line when motor failure stops a machine?

Nothing.

Men and machines simply stop producing. If a stand-by motor is on hand, the interruption need not be long. Often, however, there is no stand-by. The line just sits and waits for a replacement motor to be ordered, delivered, and installed. This can be a costly wait.

Customers of Reliance Electric and Engineering Co. don't have to wait. At the company's Midwest Distribution Center in Cleveland, the time required to select and ship a motor has been cut more than one-half. Same-day delivery to all Northern Ohio is routine with the Center.

It's called a distribution center because it is a storage and modification plant, not just a warehouse. If a customer needs a variation of a stock motor (different gear head, brake, etc.), these variations can be added here. There is no assembly or manufacturing done at the distribution center, only modifying.

Reliance has four major centers—Cleveland, Dayton, San Francisco, and Newark. They carry a large stock of parts and finished products, have test equipment and facilities for modifications. The company also has 12 secondary centers that stock products, but

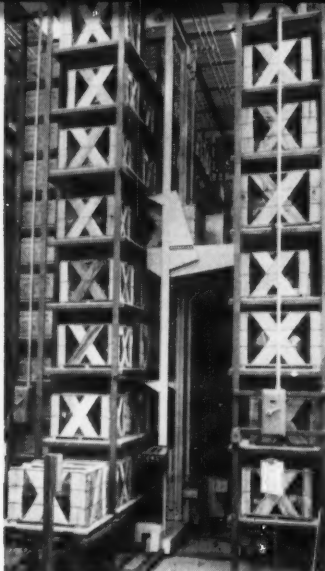
do not modify them. The distribution centers service district offices throughout the country within their respective marketing areas. The Midwest Distribution Center serves the whole country as well as district offices in its area.

### Why Build a Distribution Center?

According to Richard E. Moore, manager of Reliance's production distribution department, "This distribution center is the end result of a change in marketing concept. Our department is controlled by Marketing. Market conditions and anticipated customer requirements determine storage quantities and shipping schedules."

But it goes further than that. The Reliance distribution center fills the customers' needs for faster deliveries. Here they store stock motors (AC and DC from 1/8 to 200 hp), some larger specials, and motor parts. They also store complete variable speed drive systems and components.

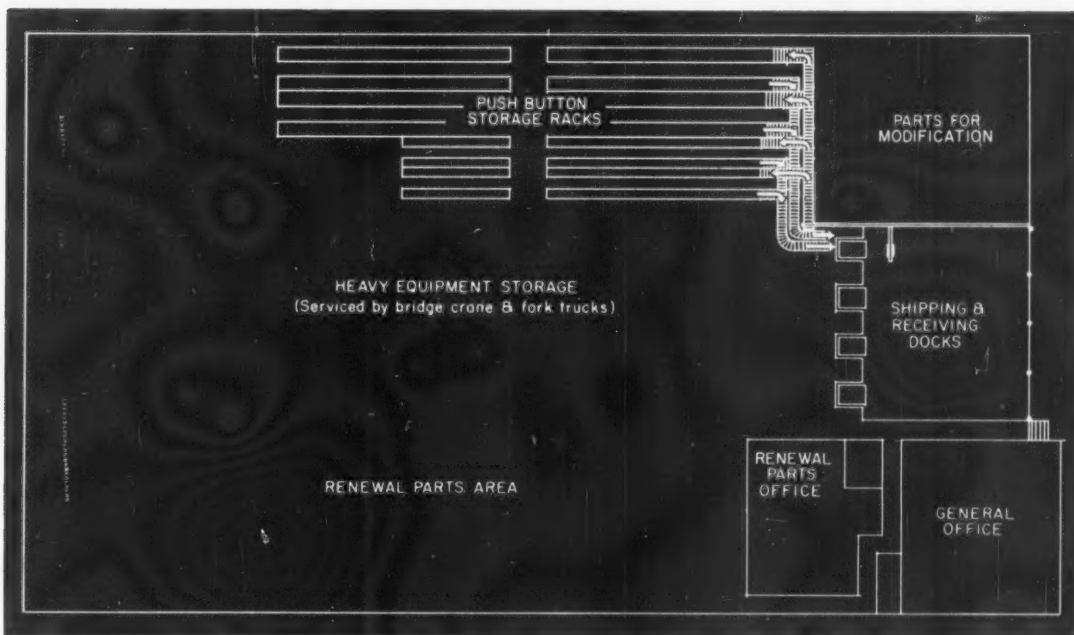
The company used to rent space in a warehouse located in a congested area of Cleveland. It was, at best, a half hour away from the airport. Crowded streets made truck terminals hard to reach. Now it takes about 15 minutes to go to the airport and 10 minutes to major trucking terminals.



**RETRIEVER** rises to a selected compartment and deposits a motor.



**STORAGE AREA** shows the depth of the random selection storage system. The Retriever can be directed to select any motor in the compartments.



**DIAGRAM** shows layout of the Reliance Electric Co. warehousing facilities. Motors are received on the

trucks and unloaded by jib cranes. Motors are then carried by conveyors to the pushbutton storage area.

### How Material Handling Aids Distribution

New developments in material handling are responsible for the Midwest Distribution Center's improved delivery schedule. The most spectacular of those developments is a push-button storage system manufactured by Triax Equipment Co. About 1500 different types and styles of motors are stored at random in racks which consist basically of double-faced storage walls divided into compartments. An electrically controlled carrier, called a Retriever, moves horizontally and vertically along the face of the wall, loading and unloading the compartments. The system is controlled

by an operator at a push-key console.

Each Retriever has four  $\frac{3}{4}$  hp motors for controlling horizontal travel along the floor, vertical travel, lifting in and out of storage compartments. A limit switch on the underside of the Retriever selects compartments by counting cross-pieces on the floor. Another limit switch counts dogs on the frame of the Retriever.

The rack retriever combination makes every item easily accessible for random selection. 4300 compartments are divided into two sizes 24" x 24" x 36" and 18" x 18" x 24". Here 1500 different kinds of motors

*(Continued on page 84)*

# The Role Of Labor Relations In Material Handling Engineering

By L. J. Dellwig

**I**S LABOR RELATIONS strictly a management problem? It may seem of little concern to the material handling engineer. However, many a good plant layout or handling program hasn't come up to expectations because of poor labor relations.

The effectiveness of any program depends on the willingness and efficiency of labor. And to a great degree, labor efficiency depends on the warmth of labor relations.

## Management Has Responsibility

Good labor relations don't spring merely from a fair, clearly understood contract. They depend mainly on the effect of employee-management relations, and on management-union relations.

It is up to management to reconcile any conflicts between engineering needs and good employee relations. You have to accommodate engineering specifications to the labor relations. You have to get the employees and union rep-

resentatives to accept planned changes in plant layout and handling.

People are usually quick to resist changes. We all know that change usually brings down-grading as well as up-grading. Those down-graded jobs, of course, demand the most attention. You have to consider seniority, performance record, and age. You have to remember that if you can transfer an employee to another job to maintain his wage rate, you've prevented an important source of resistance.

And if you can't avoid down-grading, make it clear to the men that you will not fail to explore future possibilities of moving them up again.

## Don't Ignore Established Institutions

You risk union jurisdictional problems when changes affect established institutions. You also encourage resistance. Sometimes more than one union is involved, and you run a special risk. Changes and job shuffling may

lead to a membership loss by one of the unions. Naturally it will oppose the plan.

New material handling machines and methods usually mean new patterns of using your men. Often a re-arrangement of equipment means you need fewer people on a job. Another thing to remember is that strange as it may seem, small changes affecting only a very few people will often meet with the greatest resistance.

## Tell Them The Facts

Expect resistance if you don't make the details of the change clear to the people who will be affected. Unless you make it clear, people will read their own meanings into the changes.

No management can expect much understanding when it makes changes at a time when its only contact with the union has been at the bargaining table. (Or even worse, only through its legal counsel, employer's association, or other bargaining representatives.)

If the union thoroughly understands the proposed changes, has some voice in adjusting them, the chances of gaining its support are considerably increased.

As soon as you decide to change handling methods, even before you work out the details, it is time to thoroughly investigate the employee relations. You cannot develop good labor relations at the last moment.

## Keep The Union Posted

If you tell the union representative what's going on, he can talk with some authority to his people. He maintains the dignity of his position of being alert to

*(Continued on page 37)*

L. J. Dellwig, vice-president, Blake, Moffitt & Towne, San Francisco, is well-known in Pacific Coast management circles for his work in the field of industrial relations and labor negotiations. This article is based on his talk at the Industrial Material and Packaging Conference at Stanford University. Dellwig is active in the Distributors' Association of Northern California. He is a member of the Technical Committee of The Federated Employers of California, and belongs to Employer Associations in Washington and Oregon.





LOADED PALLETS from all 8 loaders move along the live-roll conveyor; go to one of two turntables. The bales shown are headed for elevator. Other routes go to fork truck pick-up on palletization floor; or to storage and shipping.



Integrated system . . .

## Sorts And Palletizes Boxes Or Bags

**M**ECANICAL PALLETIZATION of boxes is common. With bags it is not so common. At the California and Hawaiian Sugar Refinery Corp. both boxes and bags are palletized mechanically.

Facilities handle 600,000 tons of cane sugar a year. An integrated system mechanically sorts, accumulates, and palletizes about 120,000 units every 24 hours. It handles a variety of cases, bales, and bags, and full pallets weighing as much as 4,500-pounds.

The system, designed by Lamson Corp. consists of:

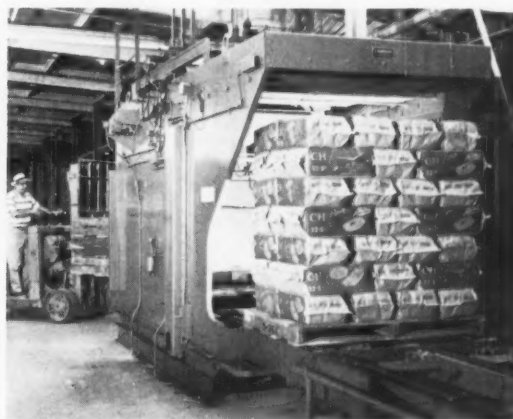
- Conveying equipment to move packaged sugar from the refinery to the warehouse.
- A station for mechanically sorting bulk packaged bags of various types of sugar.
- 17 accumulating and surge lines for collecting cases, bags, and bales for palletization.
- 8 mechanical pallet loaders
- A loaded pallet system that receives loaded pallets from the pallet loaders and automatically dispatches them to any one of 4 different points for storage or shipment.

The facilities move the packaged sugar about 1,000 feet from various refinery packing stations through the palletization area to the storage or shipment areas.

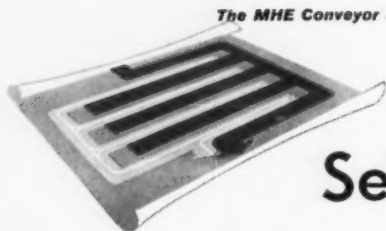
The refinery divides its packaged output into 3 classifications. The mechanical palletization has a  
(Continued on page 80)



LIVE-ROLL conveyors accumulate pallet-loads of bags; feeds them into pallet loaders. Four of 10 lines are shown. All can feed into 1 loader or go to any of 3.

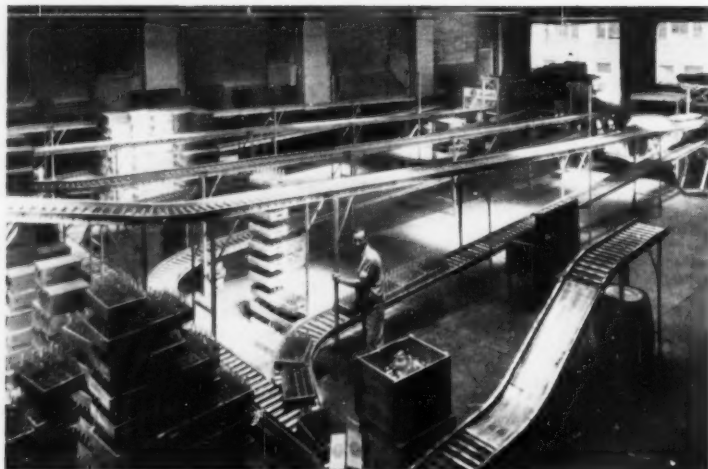


LATERAL SPACING mechanism developed on pallet loaders is at top. It makes possible the space visible between small ends of bales; provides a squared load.



## Selection and Use of Roller

Planning of roller conveyor systems and their operation are covered in this article, the fourth in the MHE conveyor series. Next month will continue with a discussion of roller accessories and details on wheeled units.



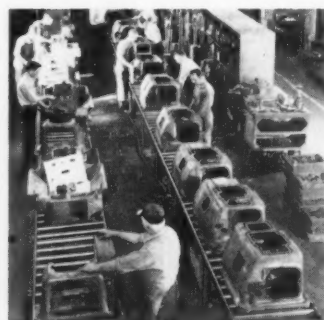
FOR LOADING and unloading this beverage bottling plant combines both gravity and live roller conveyors into its system. Live roller conveyors move packages, cases, cartons in either horizontal or slightly inclined planes.



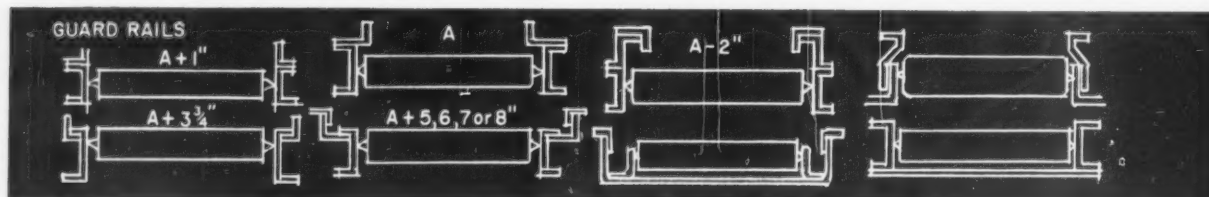
PRODUCTION foundry uses roller system to move molds to the pouring line. Transfer car moves on rails.



STORAGE of parts on roller conveyors is orderly, first in is first out. A small push moves stored stock.



ASSEMBLY of machine tools has the hard work taken out of it as heavy parts are at working level.



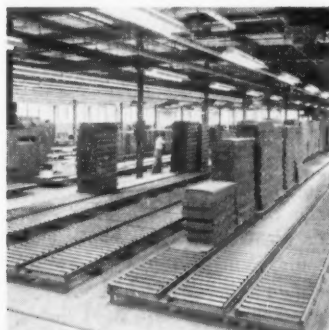
# and Wheel Conveyors

## PART 1

Roller conveyors are operated in three ways: 1. Material is pushed along level conveyors by hand. 2. Gravity moves material down conveyors set at a slight slope. 3. Material is moved along roller conveyors by power applied to the rolls.

### Push Systems

On level systems the force required to move a package is usually only 2 to 4 percent of its weight. Level roller conveyors make efficient yet inexpensive systems when: 1. The layout requires a series of manual work stations. 2. The rate of production is moderate.

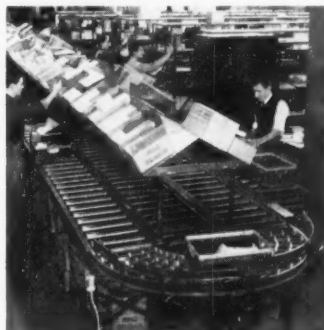


**FLOOR LEVEL** conveyors are used for storage by boxboard maker. Rollers can also be set into floor.

Typical uses are in progressive assembly and machining lines, order picking systems, temporary and permanent storage areas, inspection and rework systems, and packing areas. In storage areas roller systems save aisle space. With ball bearing rolls, a light push will move one whole stack or row of stacks. And the orderly flow of material from receiving to the discharge end insures that items stored first are used first.

### Gravity Systems

By installing the roller conveyor at a slight slope or pitch you get free-flowing transportation with only gravity as the moving force.



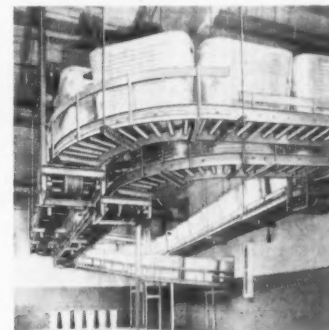
**WORKING LEVEL** conveyor makes order picking easy for drug maker. Floor space is free for storage.

COMMODITY		Plain or Dust Protected Rolls		Grease Filled or Pressure Lubricated Rolls	
		10-foot section	90° curve	10-foot section	90° curve
Cartons	5 to 10#	7½"	6"		
Cartons	10 to 20#	6"	5"		
Cartons	20 to 50#	5"	4"	7½"	6"
Crates	50 to 100#	4"	3"	6½"	5"
Crates	100 to 250#	4"	3"	5"	4"
Wood Cases	20 to 50#	5"	4"	7½"	6"
Wood Cases	50 to 100#	4½"	3"	6½"	5"
Wood Cases	100 to 250#	4"	3"	5"	4"
Beverage Cases	Empty	6"	5"		
Beverage Cases	Empty Bottles	5"	4"		
Beverage Cases	Filled Bottles	5"	3½"		
Milk Cases	Empty	6"	5"	10"	7"
Milk Cases	Empty Bottles	5"	4"	7½"	6"
Milk Cases	Filled Bottles	5"	3½"	6"	5"
Milk Cases	Empty	5"	4"	10"	7"
Milk Cases	Full	4"	3"	6"	5"
Drum	5"	5"	4"		
Barrels	Empty	6"	5"		
Barrels	Full	5"	4"		
Baskets		5"	4"		
Drums	150# and up	4"	3"	6"	5"
Algs		5"	4"	7½"	6"
Tote Pans	50 to 100#	4"	3"	6½"	5"
Tote Pans	100 to 250#	3½"	3"	5"	4"
Tote Pans	250 to 500#	3"	2½"	4½"	3"

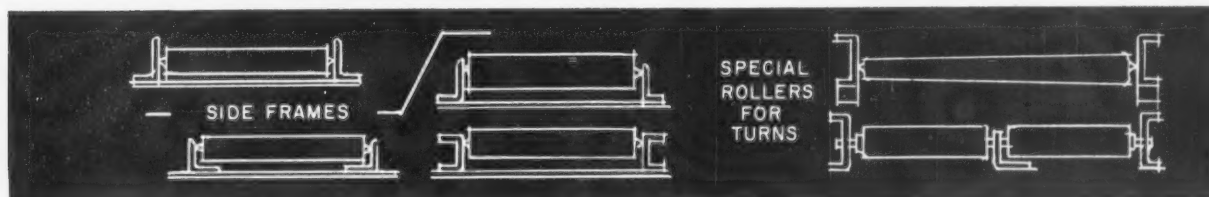
GRADES vary depending on size and spacing of rolls. Grades above are for rolls suiting the material handled.

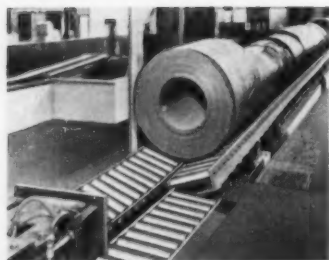
Roll Diam Inches	Roll Wall Thickness	Hexagon Axle Size, Inches	Live Load in Pounds Per Roll	
			Level	Sloped
1	1/8 Gage	3/16	50	35
1 1/4	1/8 Gage	3/8	700	150
1 3/4	1/2 Gage	3/4	700	150
2 1/4	1/2 Gage	3/4	700	150
2 1/2	1/2 Gage	3/4	700	150
2 3/4	1/2 Gage	3/4	700	150
2 1/2	7/8 Gage	3/4	750	600
3 1/4	1 Gage	3/4	750	600
4 1/4	1 1/2 Gage	1 1/4	4500	4000
5	1 7/8 Gage	1 1/2	8000	6000

LOAD ratings are average, depend on type of bearing and speed of operation.



**OVERHEAD** storage loop for empty tubs saves floor area. Tubs are received via vertical conveyor.

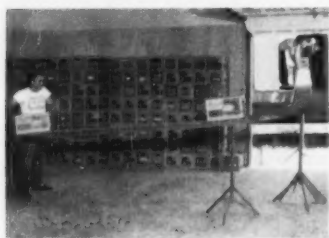




**SPECIAL** conveyor is V-shaped to handle steel coils to end of line.



**VERSATILE** roller conveyor makes connections in belt systems.



**PORTABLE** conveyors are used in loading, unloading, warehousing.



**OUTSIDE** handling of fruit crates is economical with roller conveyors.

## Roller Conveyor Selection

This makes it the most economical type of conveyor wherever it can be used. The initial cost is low and maintenance cost negligible. Gravity rollers are ideally suited to many short run handling operations.

At a slope of only  $\frac{3}{8}$  to  $\frac{1}{2}$  inch per foot of conveyor you can make runs of 60 to 70 feet at elevations that are easy to reach. Then, at the lower end of the run, short booster (belt) conveyors can be put in the line to regain elevation so that movement by gravity can continue.

If material is to remain stationary on the rolls for even a short time, or if the material is in bags with relatively soft bottoms, the pitch should be increased over that recommended in table on page 55. Aluminum rollers, having less weight, require slightly less pitch than steel rollers.

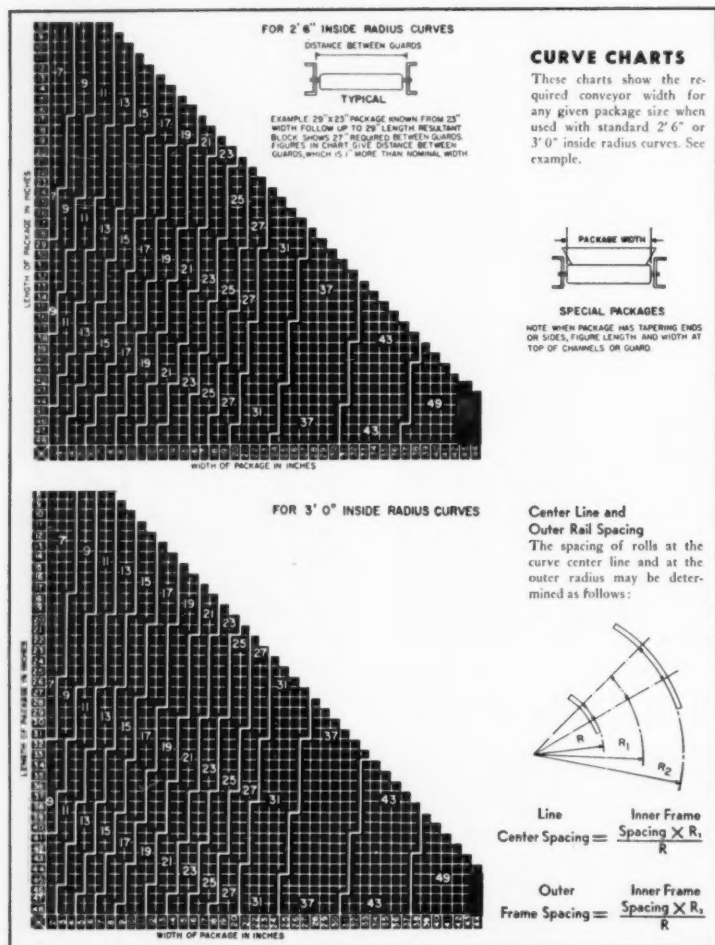
To make sure that loads travel smoothly and continuously, see that the rolls are spaced close enough together so that there are at least three rollers under the load at all times. Pitch, weight, and type of load all affect the speed of travel.

### Power Systems

Live roller conveyors use ordinary rollers which are powered from beneath by a continuous belt. It's ideal for moving loads which would damage the carrying surface of other types of conveyors. Live roller units are used instead of horizontal belt conveyors where there is a considerable amount of manual slide feed and discharge. That's because the average worker will slide packages from or to a belt and cause belt tracking problems.

While live roller systems are ordinarily level, they can be used for elevating at slopes up to 7 degrees (depending on the friction

*(Continued on page 93)*





# The Warehouse of Tomorrow—TODAY

by Allan Harvey  
President, Dasol Corp.

## PART II: Potentialities of the New Technique

*IN PART I (April) Mr. Harvey wrote that we already have all the equipment necessary to build the push-button warehouse of the future right now. The danger, he says, is that we tend to place too much emphasis on equipment and not enough on planning. As a result the warehouse often ends up as a separate operation instead of being part of a system. Or worse, it may become a group of unrelated operations. Either way, it will not do what it was intended to.*

**WHAT WILL THE WAREHOUSE OF TOMORROW LOOK LIKE?** How will it differ from its counterpart today? Will it really be a push-button operation?

Several years ago we actually designed an automated warehouse for a national trade association. It was real blue-skies automation. Everything in it from receiving to shipping and billing was computer controlled. There were only two people in it—one at the receiving platform and the other at the shipping dock. Of course, it was just an engineering stunt. It never got off the drawing boards. But since that time every element we incorporated in that warehouse has been used on one or more actual installations.

As far as material handling is concerned industry already has the equipment for automated warehouses, or can build it. We also have the controls, and the electronic computers to do the paperwork. But don't look for such sophisticated equipment in every warehouse ten years from now, or even a generation hence. Certain laws of economics don't change with time. Even in the future, only medium and larger installations will be able to justify automation.

Because although the equipment is here, it's still too expensive, and always will be for small businesses. Indeed, truly automated systems aren't going to be used even in big warehouses until the equipment becomes cheap enough to compete with manual labor.

### Systems Will Make the Difference:

As we said before, the warehouse of 1969 will be an improvement over 1959 more in *systems* than in equipment. For example, until recently nobody could do much about truck queuing. Trucks arrive at random at warehouse receiving platforms and stand in line waiting to be unloaded. What to do? More receiving docks would do away with queuing, but they're expensive, and would be unused most of the time. On the other hand, making the trucks wait is expensive too, especially if it costs you a customer. Today there's a precise mathematical way of sched-

uling operations to eliminate queuing, or to keep it to a minimum.

Buffer storage is another example of improved methods. So is linear programming.<sup>1</sup> These and other techniques like them are likely to do more to change the looks of future warehouses than new equipment will. For the first time, they give warehouse operations the precise kind of engineering and planning that used to go only into production problems. And these systems are still new; their surfaces have hardly been scratched.

### No Patch-Up Jobs:

Here's a point to beware of: the warehouse of tomorrow cannot be a patched up version of the warehouse of yesterday, or even today. Whatever else we say here about available equipment and techniques, let's make one point unmistakably clear. An automatic conveyor system cannot even come close to its potential if you put it into an operation that was engineered for manual handling. Similarly, an electronic data processing system cannot do its best for you in a system designed for manual paperwork.

The reason is that new equipment and new techniques are not just better tools to do the same job. They have a far greater potential. It's up to us to make full use of it.

### Systems Engineering and the Warehouse:

To solve a warehousing problem you've got to look at the whole problem, not just the one-eighth of the iceberg that shows above the water. Systems engineering is nothing more and nothing less than that approach. It recognizes that a warehouse, or any other business for that matter, is a system and operates better when it is engineered and managed as a system.

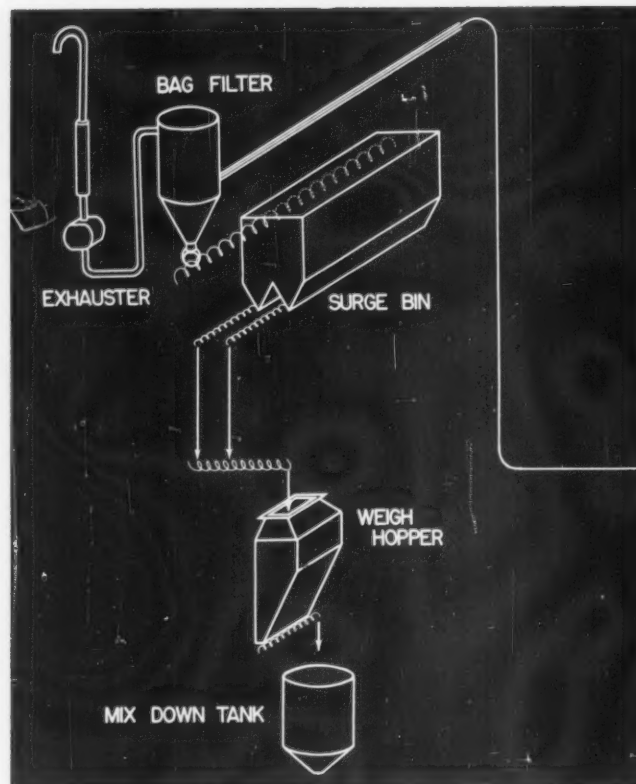
The reason why systems engineering is a sound approach to warehousing problems is that it provides a framework for ideas that is often lacking. It lets you look at all the factors and functions involved in a problem. It makes it less likely that you'll ask, "Should I buy a lift truck or install a high-speed elevator?" and more likely that you'll ask, "How should I organize and mechanize material handling to get the lowest cost, best use of space, best customer service, and highest profit?"

Systems engineering is a stern taskmaster. But that's what we'll need for the warehouse of tomorrow, if it's to be an improvement over the one of today.

<sup>1</sup> See "Can You Use Linear Programming?" FLOW, May, 1958.

**BEST IN ITS INDUSTRY** is Consolidated's new system for handling bulk starch (right). The system is a combination of low-pressure pneumatic vacuum and mechanical screw conveyors. It handles 27 tons of starch a day, as well as clay.

Glass-lined storage tanks are the key to a bulk handling system that's the first of its kind as . . .



## Paper Plant Moves Tough-to-Handle

**F**OCAL POINT of a \$15 million expansion at Consolidated Water Power & Paper Co. is a pneumatic bulk handling system for starch, the first in the paper industry. The Coating Department of Consolidated's Biron Division had eyed similar systems in other industries for years, but the paper industry needed a degree of purity that bulk systems couldn't deliver—until now.

Trouble was that starch differs in enzyme structure (a critical factor in paper coatings) from supplier to supplier. The old way, the starch came in bags that were dumped into hoppers. There was a separate hopper for each supplier. It was easy to adjust the formula slightly to suit the starch. But a bulk system mixes all the starch in a single storage area, and there's no way to keep a constant enzyme structure.

Simplest solution would have been to buy starch from just one supplier, but company engineers rejected that as bad purchasing policy. They finally compromised: they agreed to buy starch from just two suppliers, and store them separately.

### The System:

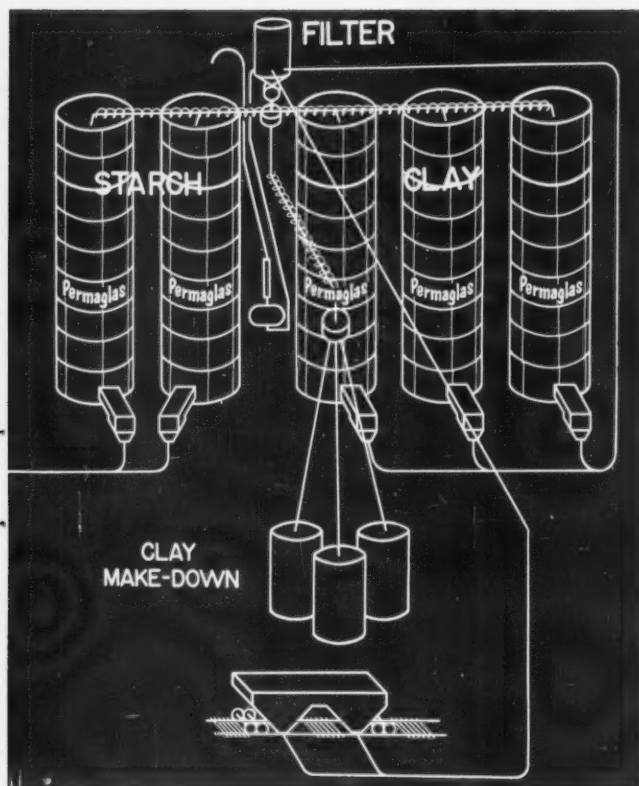
Starch would have to be handled dry, because it

tends to settle out too quickly in slurry. Consolidated decided on fluidizing — a low-pressure pneumatic handling system. And since clay handling was also earmarked for modernization, engineers decided to build one system that would handle both starch and clay.

Heart of the system is a group of five silos—two for starch, three for clay. They're a new type just developed by A. O. Smith Corp., with Permaglas lining inside and out. The glass coating inside keeps the material from sticking to the walls, keeps it contamination-free, and simplifies bin wash-down. Outside it protects the steel walls from the weather.

The handling system is a combination of pneumatic and screw conveyors. Starch and clay come to the plant in hopper-bottom rail cars. The screws and pneumatic tubes (with a network of filters, air locks, turn spouts, surge bins, and weigh hoppers) can take the materials either to storage or directly to processing.

Starch is highly explosive. Recognizing the danger, Consolidated engineers specified spark-proof motors, **Safety Features:**



## Starch by Air

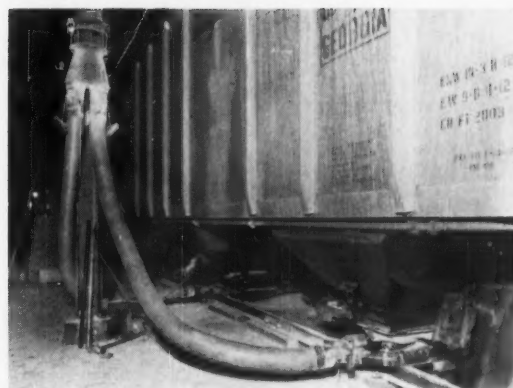
controls, and electrical connections. Engineers grounded the entire system. Wires were woven into the filter bags. Chokes between units made it easy to isolate any explosion that might occur. And for further safety, the pneumatic system works by vacuum rather than by high pressure.

### Savings:

Consolidated estimates the new system saves \$9,000 a month in starch alone. The company uses 27 tons of starch a day, and the cost is now about \$14 a ton less. Most of this savings is in the difference of price between bagged and bulk starch, and in direct labor costs for handling. Savings in clay haven't been figured yet.

### Specifications:

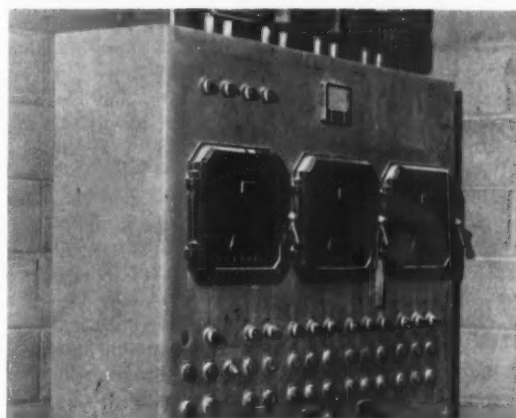
Starch silo capacity: 10,000 cu. ft. each. Clay silo capacity: 14,000 cu. ft. each. Rail car unloading rate: 30 tons per hour. Power requirements for car unloader: 17 hp. Rate of flow from silos to mix-down: 6 to 10 tons per hour. Power requirements from silos to mix-down: 30 hp.



**CAR UNLOADING.** Airslide cars full of bulk starch or clay are hooked into pneumatic unloading system.



**PNEUMATIC CONVEYOR** bag filter, background, with three glass-lined clay storage silos in foreground.



**CONTROL PANEL** for car unloading, clay make down, and clay storage. Also starch silo level indicators.



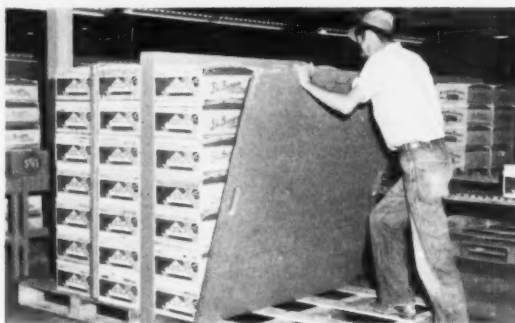
LOADER feeds field lugs of grapes into conveyORIZED packing lines. Empty boxes are removed by conveyors.



CEILING high stack of packed fruit is possible with lift trucks. Pallets are placed under cold air jets.

In the produce industry . . .

## Good Handling Saves Fruit Crops



SEPARATOR boards are used for loose palletizing; removed after pallet is loaded, they leave air channels.

**E**VERY HOUR saved in bringing freshly-picked grapes from vineyard to refrigerated temperature adds a full day to their shelf life in consumer markets.

That's why the DiGiorgio Fruit Corp. in California's San Joaquin Valley mechanized its plant. It wanted to chill the field-hot grapes quickly. And it wanted to grade and pack it for market without delay. That way the grapes reach market in the best condition, and stay in good condition longer.

The 490-foot-long, wholly-enclosed plant is surrounded by 10,600 acres that grow mostly grapes. The plant is kept between 70-75 degrees F. Outside it gets as hot as 110.

DiGiorgio handles the fruit with one of the most complex conveyor systems to be found in west coast produce handling. And with a fleet of 6 electric fork lifts; 3 low-lift electric walkies for all handling to and from conveyors; 6 gasoline fork lifts for yard work; and a special load palletizing system.

In spite of all the above modern handling facilities, J. S. DiGiorgio, president and chairman, still considers material handling in fruit ranching to be wide open to improvements. "In handling produce," he says, "time is the thing you have to beat."

The pickers put the fruit into lugs, and then on

field pallets. The fruit is trucked directly to the packing plant. They stop between sliding-door entries. No time is wasted in going to a receiving dock.

Fork lifts immediately approach the truck from opposite sides as the receiving doors open. As a pallet is put down in the receiving area, an in-plant fork lift picks it up within seconds.

They carry the pallets of cooling grapes just an aisle-wide distance to the feeding stations of 7 power conveyors that carry the lugs the length of 5 double, and 2 single packing lines.

Six months of designing by Food Machinery & Chemical Corp. went into the packing conveyor system. At 12 points it has separate conveyors stacked 6 deep. All along the packing lines, 40 degree F air cascades from ceiling jets.

At the top of the stack, one on top of the other, 2 gravity-roller conveyors deliver freshly-assembled packing boxes the length of the line. Beneath these is the incoming fruit power conveyor. Next, a powered conveyor removes empty field lugs. Beneath this is a belt conveyor on which the packers drop rejected fruit. Last there is a delivery conveyor. It carries the packed boxes to lidding machines and to palletizing.

(Continued on page 38)





ONE operator can load a truck in 30 minutes. Note the hinged drop bottom which gives an even load.



BOXES containing nonferrous scrap are stacked 4 high in yard, saving space, and giving neat appearance.

## Cost-Conscious Scrap Handling

**I**F A SCRAP DEALER isn't careful, his handling costs can eat up his profit. M. Schiavone & Sons, New England's largest scrap dealer, saves its profits. It blends into its operations material handling principles you usually associate with manufacturing plants and warehouses.

Rugged steel Work-O-Matic boxes and a fleet of industrial lift trucks are cutting costs in half in Schiavone's nonferrous department.

Barge, railcar, and truck shipments carry scrap for mill feed from Schiavone's main yard at New Haven, Conn., and from the company's 23 acre yard in Boston. The scrap goes all over the northeastern United States.

They ship about a million pounds of nonferrous scrap (brass, aluminum, bronze, etc.) a month. That's not nearly as much as the iron and steel they ship, but the processing costs are proportionately much higher.

Most nonferrous scrap comes in

the yard on a truck in what is called a "dealer's load"—an assortment ranging from boilers to aluminum ships. The mixture may be in 50 gallon drums, cardboard boxes, pails, or just loose. Unloading and separating is a lengthy procedure.

Loads are taken from a truck by either hand or lift truck. They go to a sorting room to be separated by metal or alloy, and by shape.

Sorters dump the sorted material into 50-gallon drums. Lift trucks carry them out into the yard, where they are emptied into Work-O-Matic boxes made by the Union Metal Mfg. Co. A separate box is used for each nonferrous metal. Each box measures 36 x 33 x 48 inches. Normally, they hold the contents of 4 or more drums.

### Hinged Drop Bottom

The boxes are equipped with a hinged drop bottom. This enables loads to be positioned correctly for even distribution on the de-

livery truck.

When a box is loaded, a powered lift truck moves it out to inventory stack. There, boxes are stacked 4 high. Stacking saves as much as 40 percent space, and it involves no manual handling. The height is limited only by the lifting range of the truck.

When an order for scrap is received, the lift truck pulls the boxes, takes them to a loading ram. The lift trucks empty the boxes into waiting delivery trucks. If a customer has ordered 30,000 pounds of loose copper bearing material, 10 or 12 box loads of proper scrap will make up the order.

It can be loaded in about half an hour. The old method of storing in 50-gallon drums would have taken several men 3 hours to handle.

Neither thousands of hours of service or corrosion have caused any mechanical defects in the boxes, even though they're used outside.



**TAPEnology "freezes" shelves for shipment quickly, effectively...for pennies!**

Here's how a few pennies worth of tape gives quick, clean, efficient protection to thousands of dollars worth of merchandise. Prior to crating these 12 ft. commercial refrigeration cases, multiple strips of "SCOTCH" Brand Filament Tape are passed over shelves, parts, and all movable components to fasten them securely in place.

"SCOTCH" Brand Filament Tape is strong—holds up to 500 lbs. per inch of width; sticks and holds at a touch; strips off clean without leaving residue. And tape won't scratch or mar delicate surfaces; won't cut workmen's hands.

**What do you ship?** Super-strong "SCOTCH" Brand Filament Tape offers dozens of time- and cost-saving shortcuts in holding, bundling, carton reinforcing, palletizing. Your "SCOTCH" Brand distributor will be glad to give you more information. Or, write: 3M Co., 900 Bush Ave., St. Paul 6, Minn., Dept. IAG-79

*When tape costs so little, why take less than "SCOTCH" Brand?*

—“SCOTCH” is a registered trademark for the pressure-sensitive adhesive tapes of 3M Co., St. Paul 6, Minn. Export: 99 Park Ave., New York 15, Canada: London, Ontario.

**MINNESOTA MINING AND MANUFACTURING COMPANY**

... WHERE RESEARCH IS THE KEY TO TOMORROW

**SCOTCH**  
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## MATERIAL HANDLING ENGINEERING

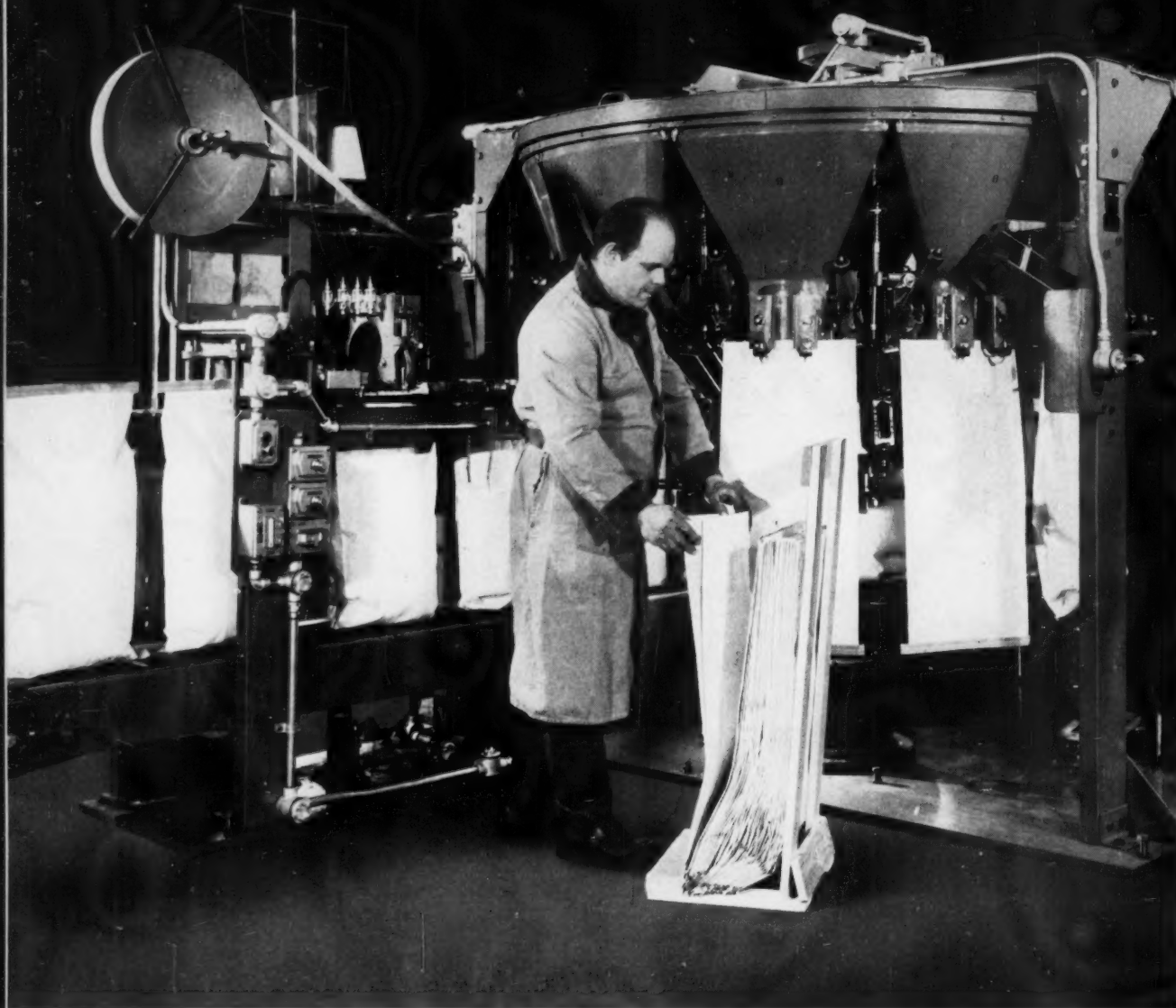


# ***PACKAGING AND***

# ***SHIPPING SECTION***

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## Famous Model "AF" Bagpaker weighs, fills, settles and closes a 100-lb. bag every 2½ seconds!

**W**ITH THIS engineering marvel at his command, the *one man* in our picture can package from 15 to 25 BPM. And he can *instantly* adjust the rate of speed through the machine's variable drive.

The operator simply hangs empty multiwalls on the hopper spouts as the 10-station turret rotates past him. The Model AF Bagpaker takes over from there.

It accurately *weighs* any free-flowing or semi-free-flowing material, quickly *fills* the bag, *settles* it by vibration, automatically *preforms* the top, and *stitches* it tight. You can choose from nine different closures. Bagpak's exclusive "Cushion

Stitch," a reinforced two-thread double-lock chain stitch, is standard equipment.

The Model AF Bagpaker is ruggedly constructed of heavy welded steel throughout. Gears are fully enclosed and bathed in oil. Critical parts are of *stainless steel*.

There is a Bagpaker model for every need. They range from the completely automatic Model "A" Bagpaker, capable of packaging up to 60 tons per hour, to small, manually operated economy models.

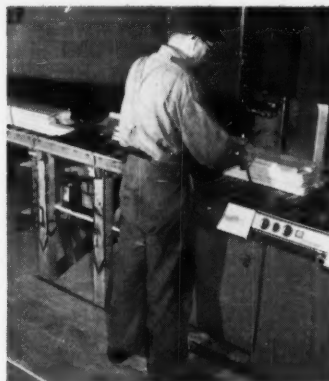
Whatever your multiwall packaging needs, it will pay you to talk to your Bagpak sales and service representative.



Bagpak Division **INTERNATIONAL PAPER** New York 17, N. Y.

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OPERATOR feeds steel strapping around one end of flooring bundle.

## Strapping Machine Increases Bundling

WITH its conveyORIZED packaging line equipped with a strapping machine, Canadian mill Groleau, Inc. bundles up to 68,000 lineal feet of hardwood flooring in an 8-hour shift.

Operated by one man, the machine applies 3,000 straps in one shift. The same operator also grade-stamps the bundles, and he stacks them on a cart for transfer to the warehouse.

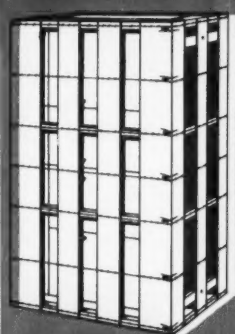
The set, uniform strap tension makes such tight packages that the mill has been able to increase the size of its flooring bundles by half. The machine automatically cuts the strapping close to welds, eliminating material waste.

The bundles are made up on a roller conveyor near the grading racks. Eighteen pieces make up a bundle. They're placed on the conveyor, move to the strapping point. The strapper is an F1 Acme Steel strapping machine. It tensions, spot-welds, and cuts the strap all by push-button controls.

Depending on the length of the bundle, it applies one or three  $\frac{3}{8}$  x .015 inch Acme Steel galvanized steel straps.

The even tension on all bundles helps prevent warp while the flooring is kept in storage.

Use of the controlled power helps eliminate operator fatigue even during peak production periods.



WIREBOUND BOXES AND CRATES



WIREBOUND PALLET BOXES



## WIREBOUND BOXES and CRATES

You'll find it pretty difficult to beat the coconut shell for functional, dependable, rugged "packaging". Superstrong Wirebound Boxes and Crates provide these advantages and many more... saving you time, money and labor in your shipping problems. A trained Superstrong Wirebound engineer will give you the details... send for his expert help now!



WOODEN PALLETS

## CORRUGATED FIBRE BOXES



CALL CANal 6-0973 or write Dept. 300

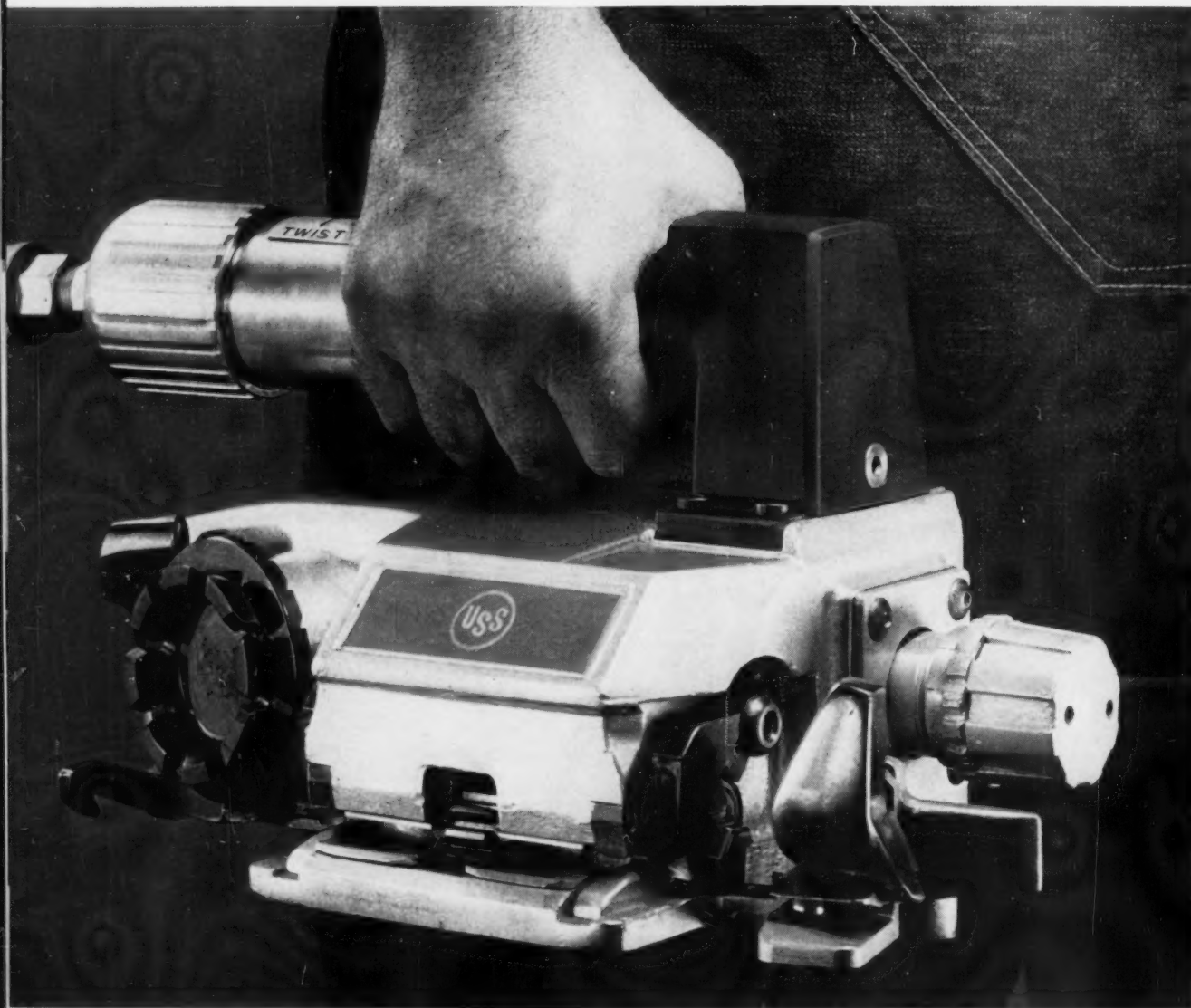
# RATHBORNE, HAIR & RIDGWAY BOX CO.

1440 West 21st Place • Chicago 8, Illinois

REPRESENTATIVES IN ALL PRINCIPAL INDUSTRIAL AREAS  
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# Another example of **USS** COMPLETE

## NEW! Portable Model 13 uses



**U. S. Steel Supply  
Division of  
United States Steel**



**Lightens your work.** USS Steel Strapping Model 13 is brand new—the only one of its type. It is a portable, semi-automatic tying machine that makes packaging and palletizing faster and less fatiguing, helps you tie more bundles or cartons per day. It is designed for any packaging or palletizing operation which can use 12- to 15-gauge round steel strapping. Because Model 13 is portable . . . it weighs only 20 pounds . . . it can be carried quickly to any spot where it is needed. It operates on air power—one twist of the wrist draws the strapping to a predetermined tension, and the reverse twist ties and trims the strap. Equal work load on all straps at all times with built-in adjustable tension control. For production line use, a suspension attachment and balancer keep the machine readily available.

U. S. Steel Strapping formerly Gerrard Strapping  
Steel Service Centers and Complete Steel Strapping Service Coast to Coast



**STRAPPING**

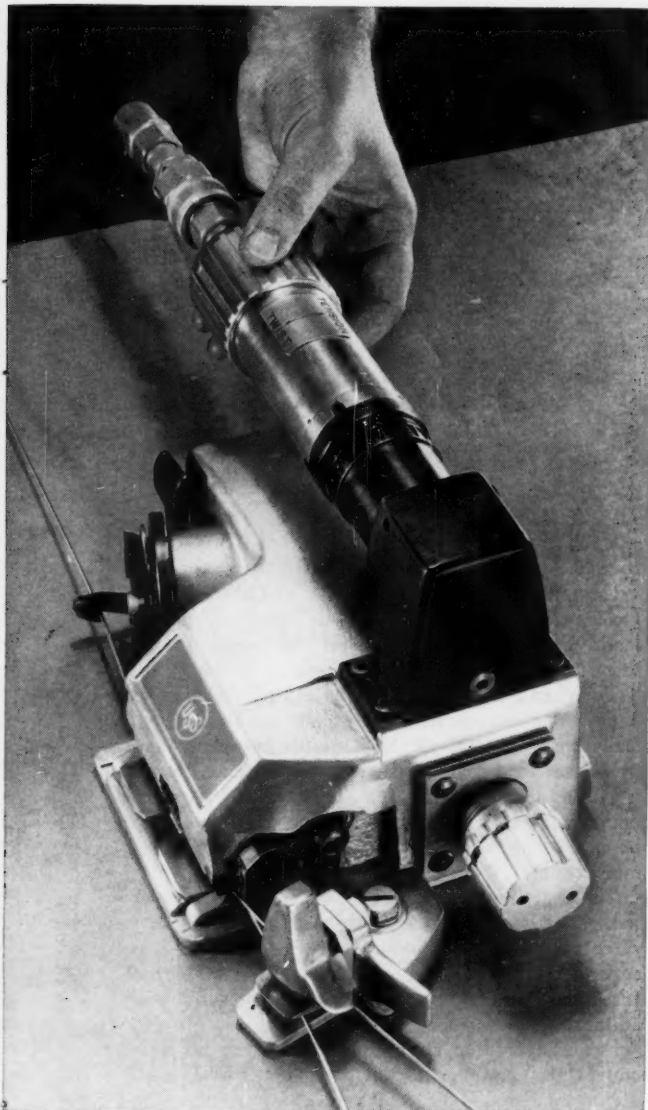


**STRAPPING TOOLS**

**MATERIAL HANDLING ENGINEERING**

# STEEL STRAPPING SERVICE

## air power for faster, easier tying



**Brightens your profits.** Model 13 can help you eliminate production line delays because it can be operated quickly and easily. It makes up to 10 ties per minute, even over long periods because it does not tire the operator. And because Model 13 uses USS Round Steel Strapping, sizes 12- to 15-gauge, it offers the possibility of a substantial reduction in strapping costs. Round Steel Strapping gives you the highest possible tensile strength for the weight of its steel. It therefore costs less per strap. Many manufacturers have noticed a sizeable reduction in strapping costs, in some cases as high as 50%, after switching to USS Round Steel Strapping.



**Widens your potential.** Model 13 will help you speed up packaging and palletizing procedures, perhaps even break a bottleneck that is seriously hampering your output. Faster tying means faster shipping and higher production per day. A USS Steel Strapping Specialist will be glad to consult with you about the application of Model 13 to your tying problems. His experience is yours for the asking, and his recommendations will be tailored to your situation. Because we handle both round and flat steel strapping, his suggestions will not be biased in favor of any particular form of strapping—they will be aimed to make your tying operations fast, safe and economical. Please write for a free copy of our Sweet's Catalog insert for further information. U.S. Steel Supply Division, United States Steel Corporation, 208 South LaSalle Street, Chicago 4, Illinois.

*USS is a registered trademark*

★ **TECHNICAL ASSISTANCE**

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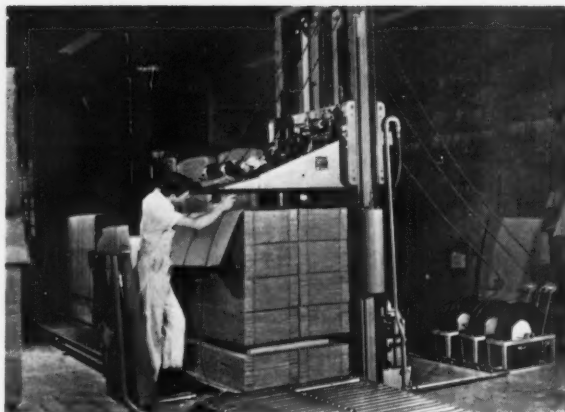
JULY, 1959

67



THERE ARE 700 CORRUGATED BOXES in the load being strapped here. They're stored, handled at a fraction of the time and cost needed for the same number of boxes packaged in smaller bundles.

Here's why you and your supplier are both better off if you buy . . .



## Corrugated Boxes in Unitized Loads



**I**F YOU HAVE mechanical handling equipment, you're not taking full advantage of it if you buy corrugated boxes in small bundles.

Customers of Menasha Container of California now receive all their boxes in large, steel strapped, unitized loads. Each unit contains about 700 boxes. One of them replaces 28 of the former small bundles.

The change-over made both customers and supplier happy. Menasha can handle the loads quickly, economically with fork trucks. Most of the customers have trucks too, so they get the same advantage. Storage is easier at both ends too. The loads are strapped under compression; that makes them firm enough to be stacked up to the ceiling. And taking inventory is much faster.

The heart of Menasha's new system is a conveyor-fed Acme Steel strapping machine. It receives a stack of corrugated boxes, compresses them, then tensions, seals, and cuts. It can apply one, two, or three straps. It's air-powered, and electrically actuated by push buttons.

Menasha used to strap some loads even before it bought this equipment. But strapping was manual. The new method is 30 to 50 percent faster and cheaper. And it allows all strapping operations to be done by one man, at a central location.

Menasha makes up units either with or without spaces for forks, depending on the customer's handling equipment. Those who have fork trucks with chisel forks usually prefer loads without spaces for forks.

From the time the boxes leave the conveyor, until the customer is ready to use them, they are moved by mechanical handling equipment in a fraction of the time needed for individual tied bundles.

**LOADS ARE STEADY** enough to be stored all the way up to the ceiling. Here a fork truck with unloader attachment handles loads made with voids for forks.





## International "AIR BOXER" becomes a Strong Link in Chain Manufacturer's New Packaging Program

- Stapling Replaces other carton closing methods.
- Provides Heavy-Duty Packaging — at lower cost.

The American Chain and Cable Company is one of the world's largest manufacturers of chain and chain assembly products. These products are bulky and heavy, and obviously require a dependable and heavy-duty form of packaging.

The company's packaging program was reviewed and completely revised. The number of sizes and types of cartons or boxes were materially reduced. Two other methods of carton closure were eliminated in favor of INTERNATIONAL STAPLING — using the air-operated INTERNATIONAL AIR-BOXER. This highly efficient stapling machine has helped effect the following economies.

(1) MATERIAL COSTS HAVE BEEN GREATLY REDUCED by replacing other types of containers with re-designed corrugated cartons and using INTERNATIONAL STEEL STAPLES to do the carton closing job formerly done by costlier and more time-consuming methods. The resulting staple

closure is safe and secure, requires less time and material, no waiting for adhesives to dry and is not affected by humidity. In addition, the closed cartons stack better and look better because there is no interference with the printed message on the carton.

(2) LABOR COSTS ARE CUT IN HALF compared to previous methods. The manufacturer further reports, "We have found stapling the most efficient and economical type of closure for our operation."

Add to this the extreme versatility of the International AIR-BOXER — lightweight, portable, and designed to close all kinds of cartons (center slot, partial or full overlap, etc.)

What it has done for this manufacturer, the International method of carton closing can do for you. There's an International Stapler for every size operation in portable or stationary models — or a custom model can be designed for you.

Write for "The Modern Low Cost Way to Close Cartons."

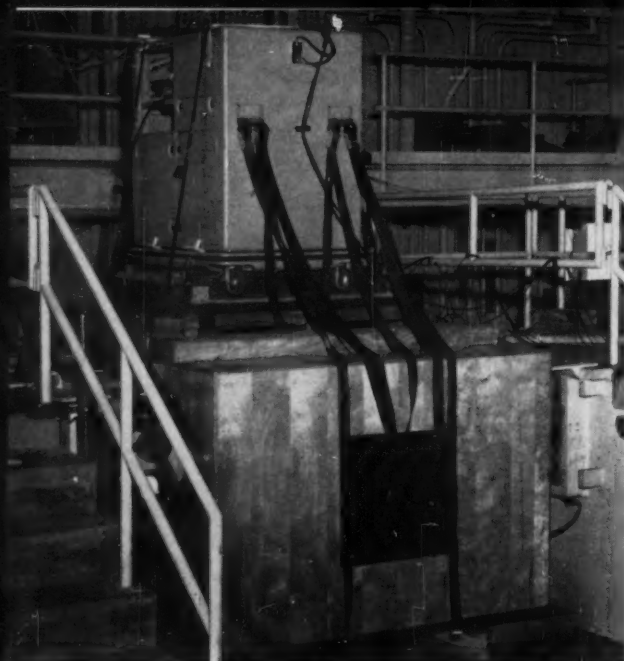


# International Staplers

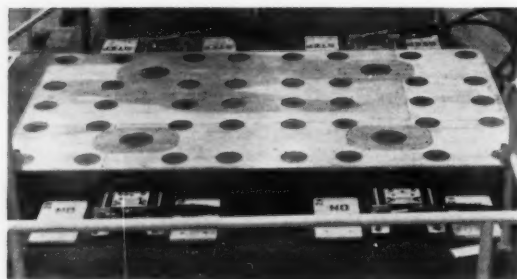
INTERNATIONAL STAPLE & MACHINE COMPANY  
P. O. BOX 270  
HERRIN, ILLINOIS

Originators of Carton Closing Staplers

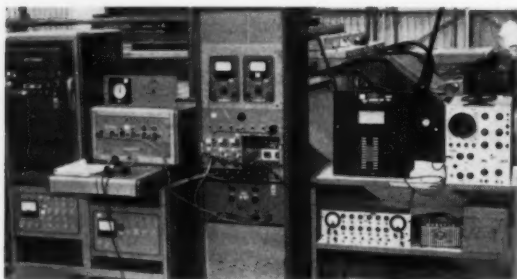
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EQUIPMENT BEING TESTED, mounted on test stand, ready for shakes. The sides and top of the container are removed whenever possible so engineers can watch the product in motion. The cushioning pad between the part and base of this container failed early in tests.



TEST STAND GENERAL VIEW. The vibrating table is wood, 6 ft wide, 10 ft long, 4 ft thick. Its foundation is a 400-ton block of reinforced concrete. The actuator discs, exposed on sides of table and pit in top right photo, are engaged here, ready for use.



TYPICAL INSTRUMENT SETUP. Six accelerometers are mounted on the container being tested, on all 3 axes, to monitor acceleration. Several others mounted on the shaker table monitor input vibration. All accelerations are tracked on oscillographic recorders.

## Vibration: What

What happens when packages vibrate, and how one company tests its containers to make sure guided missile control equipment is protected from vibration while being shipped.

**VIBRATION IS DEADLY** to packaging. Often a small but continuous vibration does more damage than the occasional hard shocks caused by humping, dropping, etc. It may compress cushioning materials to the point where they're useless, or cause parts of the package or product to fatigue, maybe break.

Some of the things that make rail cars vibrate are flat spots on wheels, uneven rail joints, or high spots on rails. Bumpy roads may make trucks vibrate, but more likely they'll just bounce. It's not vibration until it becomes a regularly timed pulsation.

Resonance is the real enemy in packaging, because relatively small vibrations may trigger it. A low-amplitude vibration, harmless in itself, may set up high-amplitude resonance that could conceivably tear a package and its contents to pieces.

### Lab Testing Is Tough

Vibration in common carriers is usually at frequen-

### Common Terms You Should

**Cycle**—One complete vibration, from stationary position to extreme, to opposite extreme, back to stationary position. A vibrating object travels two complete strokes to a cycle.

**Frequency**—The speed of vibration, or number of cycles in a given time. Usually measured in cps (cycles per second).

**Amplitude**—The distance from the center of a stroke to the edge, or half of the total stroke. It's determined by the weight of the object and the amount of energy causing the vibration.

**Natural frequency**—The frequency at which a given material prefers to vibrate. It may vibrate at

# It Is and How Tests Cut Damage

cies up to about 200 cps. But a rail car or truck isn't likely to vibrate at just one isolated frequency; more likely at several amplitudes and frequencies superimposed on each other. That's why it's almost impossible for packaging engineers to figure in advance what type of vibration a package will encounter, and how to design against them. The most effective tests are performance tests, in which packages are actually vibrated in the laboratory to see how they'll stand up to simulated transport conditions. But sometimes that too can be risky. It involves special equipment, and it gets into fields where there's little to follow in the way of standards.

## A Case in Point:

A good example of vibration testing is the program used successfully by Northrup Corp. Northrup's Norair Division makes the ground support equipment for the Air Force's Snark Intercontinental Guided Missile. The contract for this equipment specifies that the parts must be vibration tested in their shipping containers, according to Vibration Procedure III of Specification MIL-E-4970 (see chart below right).

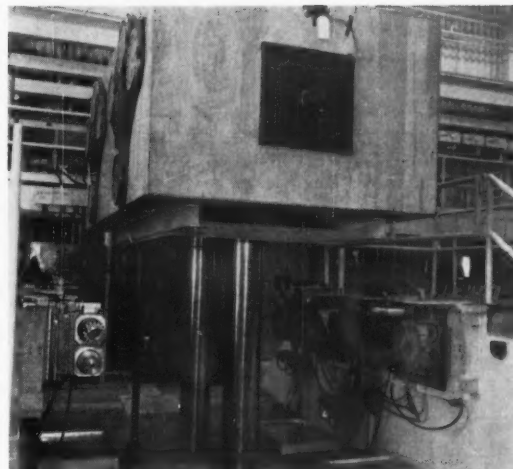
That presented a challenge to D. A. Bond, Senior Engineer at Norair. Some of the containers are up to 6 feet wide, 10 feet long, and weigh up to 5,000

(Continued on page 92)

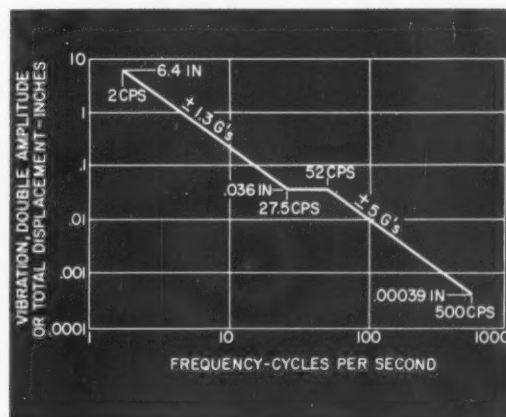
## Know About Vibration

other frequencies too, but only if it's forced to (e.g. bolted to a vibrating table, etc.).

**Resonance**—The phenomenon of one object picking up vibrations from another. It occurs only when the frequency of the first is the same as or a multiple of the natural frequency of the second. A good example: strike a tuning fork, then hold another of the same pitch close to it; the second will pick up the vibrations of the first, without touching it. Another example: soldiers marching across a bridge break step because their cadence might match the bridge's natural frequency; it might go into resonance and sway or collapse.



**TEST SHAKER** Norair uses for vibration tests. It's disconnected here. Four synchronized double-end hydraulic actuators give it its force. They can rotate 90 degrees for vertical axis vibration during tests.



**FREQUENCY-AMPLITUDE CURVE** specified in MIL-E-4970. Frequency ranges from 2 to 500 cps, but the Norair contract reduced it to 300. Note that at 2 cps and  $\pm 1.3$  G's the double amplitude or stroke is 7 in., and at higher frequencies the acceleration is  $\pm 5$  G's.

# Dock Levelers vs. Truck Levelers

by F. P. Stumpfler  
Department Chief, Engineering  
The Western Electric Co.

**I**T TAKES 32 WAREHOUSES to distribute all of Western Electric's products to the various Bell System telephone companies. We call them Distribution Houses. They're located throughout the country. In the last 10 years we have expanded them by almost 4 million square feet of floor space. And our forecasts call for still more expansion in Illinois, Westchester, Miami, Pennsylvania, New Haven, and New Jersey.

Our engineers recognize the importance of material handling in these distribution houses. Particularly at the shipping and receiving docks.

To load and unload efficiently, a truck or trailer backed into the dock should be at the same level as the dock, or close to it. But this almost never happens without some raising or lowering apparatus. The average distance from truck bed to pavement is 51 inches for heavy trucks, 43 inches for light trucks. That dimension may vary 6 inches up or down, depending the truck and the load.

We study the type of truck, nature of the load, and volume of traffic before deciding how high the dock should be for one of our buildings. There is no such thing as a cure-all answer to this height problem. However, 43 to 50 inch docks are satisfactory for most trucks. Figure slightly lower if most of the trucks are small ones.

Avoid having docks higher than trucks if possible. The dock should be lower than the truck bed, so the rear doors can open and close unhampered.

## Three Types of Levelers:

Once you have settled on the height of the dock, there are three common types of equipment you can choose to span the gap from vehicle to dock: dock boards, dock levelers, and truck levelers.

**Dock boards**—By far the simplest and most widely used. They may be magnesium, aluminum, or steel. They're usually satisfactory where the difference in height is less than 4 inches.

**Dock levelers**—There are two types. Both have a hinged end at the dock, the other end free to move up and down with changing truck heights.

The first type is hydraulically operated. It fits into a recess in the dock, or it may be mounted in front of the dock if there's room. The hydraulic system is actuated by an electric motor. Hydraulic levelers may be adjustable in three directions. You can get them: 1) vertical only; 2) vertical and forward and back; 3) vertical, forward and back, and left and right.

The second type of dock leveler is purely mechanical.  
(Continued on page 90)

COST COMPARISON *			
	Hydraulic Leveler	Mechanical Leveler	Truck Leveler
Basic Unit	\$1,500	\$1,000	\$2,300
Nominal Installation	500	200	\$3,400
Pit Construction	700	700	
	\$2,700	\$1,900	\$5,700
Cost of Dock Space	2,000	2,000	.....
Net Cost Per Unit	\$4,700	\$3,900	\$5,700

COMPARISON OF FEATURES	
Dock Levelers	Truck Levelers
ADVANTAGES	
1. Shipped, packaged, pre-assembled.	1. No steep incline to stall low under-clearance lift trucks.
2. Alignment requirements of truck are not as rigorous as for truck levelers.	2. Automatically spots trailers.
3. Some types compensate for uneven distribution of load.	3. Leaves dock area clear.
4. Require less power to operate.	4. Lift trucks can maneuver over entire width of road truck upon entering or leaving.
5. Ramp floats on tail gate and does not require readjustment.	
DISADVANTAGES	
1. Require valuable dock space.	1. Highway trucks must be chocked to prevent possible roll.
2. Steep slope into truck.	2. Apparent high initial cost.
3. Lift trucks must approach ramps squarely to avoid danger of tipping or going off edge.	3. Dock boards must be used for small gap remaining.
4. Road trucks with load extending fully to rear are hard to unload because ramp rests on rear edge of truck.	4. Height must be adjusted during loading or unloading.

\* Prices mentioned by the author are approximate, and may vary according to make of equipment and location.



# Brainard

## STEEL STRAPPING

offers these 3 big facts

**High quality  
...controlled  
all the way**

The wide scope of Brainard control of quality begins at the ore mine and follows through ore smelting, steel making and, finally, to fabrication specifically for your packaged product. You can be sure of highest quality.

**to compare!**

### **An assured supply for quick delivery**

Your exact order—large or small—will be promptly handled because steel manufacturing and steel fabricating are one company—located in the same area. We've got the steel. We've got the capacity. Your order can be produced—on time.

### **Our service obligation is— Action for You**

Here's typical service-action that Brainard personnel from top to bottom can give. A customer called at 11:45 one morning for an emergency order of a special strapping. Three hours later his order was on the road in a Brainard truck. It was delivered at 7:30 next morning—446 miles away. He got what he wanted—when he wanted it!

...In short, we're big  
enough to do anything—  
and middle-sized enough  
to want to—Call us...  
Prove it to yourself!

**BRAINARD**

Safe-Ty

**STRAPPING**

In Canada: Brainard Steel, Canadian Division, Toronto, Montreal

MAKERS OF TENSIONAL, HEAVY DUTY STRAPPING, SEALS, ACCESSORIES, TOOLS FOR CARLOADING AND PACKAGING



**PAPER HANDLING** is a headache. The rolls go across street riding on an underground slat conveyor.



**BUNDLING LINE.** Finished papers come from pressroom, rear. Before this operation took 3 more men.



**TYING MACHINE** ties 22 bundles a minute. One 56-page paper uses 300 lbs. of steel wire a day.

## Hurry-Up Shipping Room Helps Newspapers Get Out on Time

Getting newspapers to your doorstep at a pace that matches the most modern printing presses takes a carefully engineered shipping room and a bank of automatic bundling machines.

**N**EWSPAPERS are faced with some of the toughest of handling problems. Most people think of the modern newspaper printing plant as a collection of mammoth high-speed presses pouring out papers on conveyors faster than the eye can follow. But it doesn't end there. Handling the papers between press and delivery truck has to be swift too, or all the time the giant presses save is wasted. The Akron (Ohio) Beacon Journal recently installed a system that makes its shipping room, like its pressroom, one of the most modern anywhere.

Beacon Journal presses can print three 96-page papers, each rolling off at 55,000 copies an hour. Overhead conveyors carry the finished papers to four bundling lines in the shipping room.

### Shipping:

Focal point of each of these bundling lines is an automatic Wiretyer bundling machine. As the papers come off the overhead conveyors from the presses, they go onto a powered roller conveyor leading to the machine. Workers alongside the line stack the papers into bundles, and the bundler bands them tightly with loops of steel wire. After it ties the loops, all automatically, it passes the bundles onto another conveyor that leads through a window, out to the shipping dock, onto a belt conveyor running the length

of the dock (180 ft). Deflectors shunt the bundles off the belt onto roller telescoping conveyors, into waiting delivery trucks.

Before this system, the Beacon Journal bundled the papers manually—four to six men to a station. In addition to running up labor costs, the operation was slow, and backlogs often caused production delays.

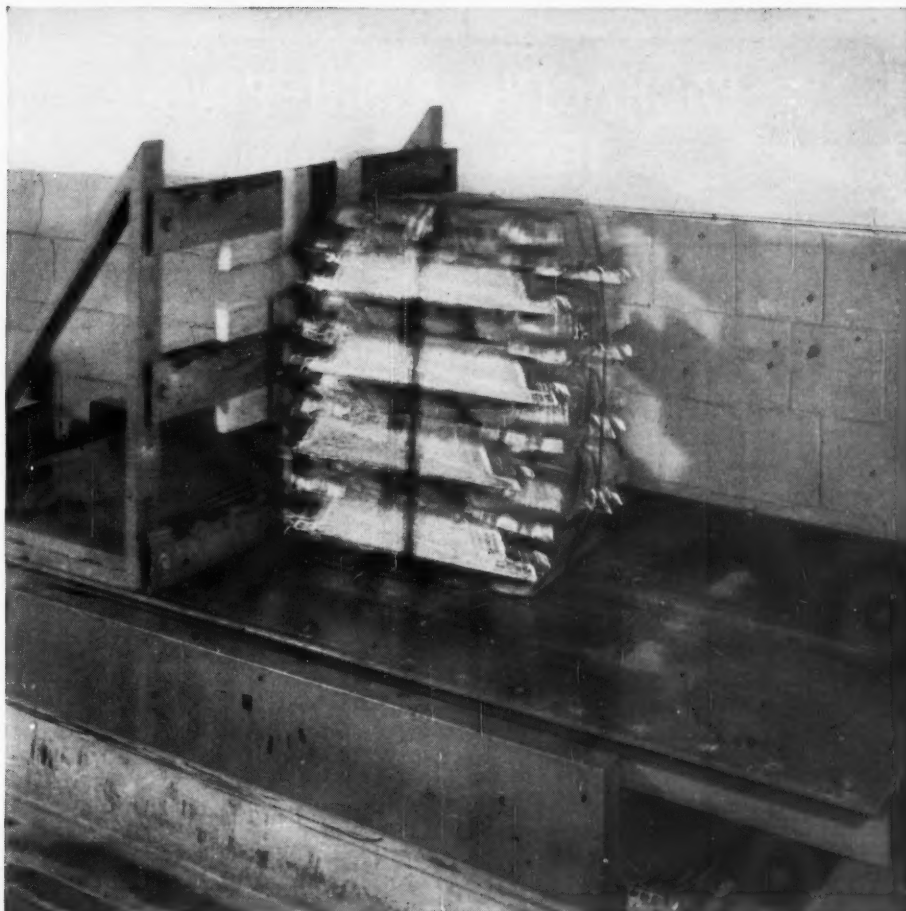
### Paper Handling:

Another example of the Beacon Journal's advance methods is its handling of roll paper. From receiving dock to presses it's fast, efficient, mechanical.

The Beacon Journal (circulation 175,000 daily and 185,000 Sunday) uses about 80 rolls of paper a day. That's about 60 tons a day, 40,000 tons a year, enough to stretch a 5-foot strip around the equator 5 times.

Two boxcars of paper come in a day. The rail siding is across a busy street, and getting the rolls from boxcars to plant takes some efficient handling. A clamp-equipped lift truck takes the rolls out of the boxcar and deposits them on a slat conveyor that takes them across the street, through an underground tunnel. Here another lift truck takes them either to storage or to another conveyor leading to the pressroom. The newspaper keeps a constant stockpile of paper on hand, enough to last three to four months if the incoming supply were interrupted.

Vibration test of  
ingot bundle. Signode  
vibrator handles up to  
3 tons at accelera-  
tions over one G.



After test, equivalent to the effect of  
expected actual handling and transit, the  
bundle still looked like this.

## Shake well before shipping!

A neat 2,300 pound bundle of aluminum ingots becomes 44 ingots trying desperately to go their separate ways...driven by the joggles and jolts of the vibration tester in the Signode Packaging Laboratory. The ingots hold together, though. They're bound to...by 51 cents worth of steel strapping pulled to about 3,000 pounds tension. We don't know of another material that could do this job at all...let alone at such low cost. And consider the savings of having Signode find out *in advance* and at no cost to you how to make your product behave in transit. This is one more way Signode helps make things cost less to handle, store, ship, and receive. For further information, talk to the Signode man near you, or write:



*First in steel strapping*

### **SIGNODE STEEL STRAPPING CO.**

2618 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide  
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

Circle 122 on Reader Service Card for more information



## PACKAGING & SHIPPING IDEA of the month

# Mechanized Loader Speeds Jet Baggage Handling

**B**AGGAGE SERVICE keeps pace with jet travel on American Airlines' new Boeing 707 Jet Flagship flights. American uses an expediter system composed of fiberglass baggage containers and a fleet of custom-made electric hoists to get loads in and out of the airplane in record time. The specially designed system loads and unloads a plane in 15 minutes, compared to 35 minutes manually.

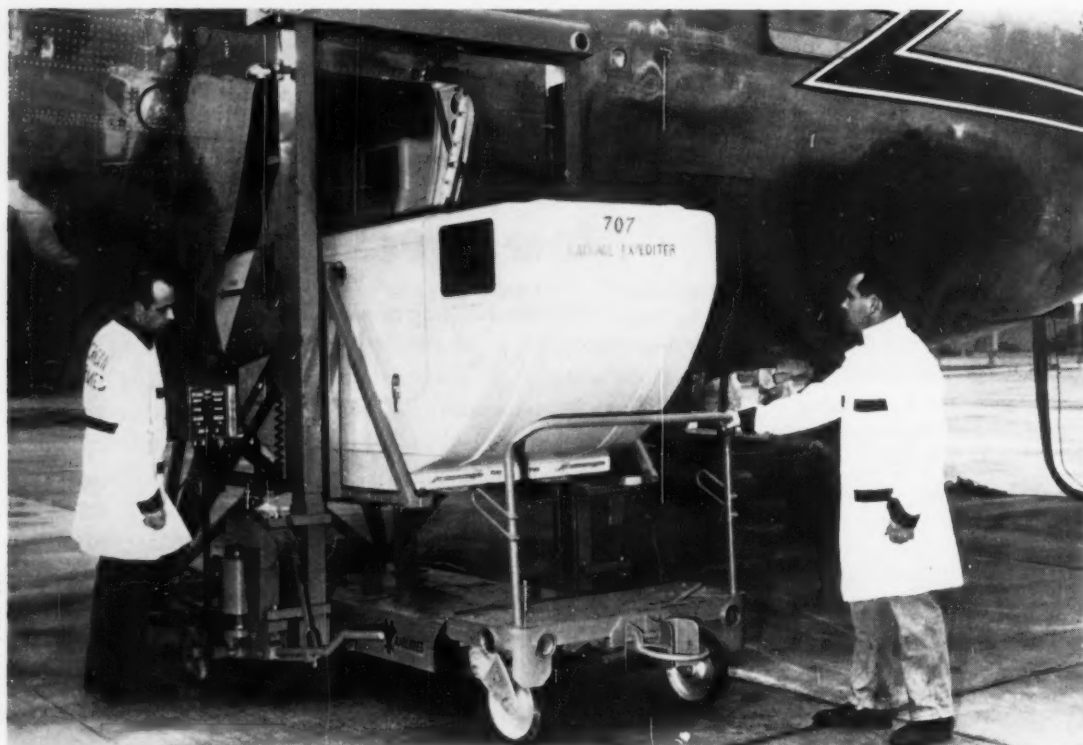
Workers load the luggage into the fiberglass containers right at the registration desk in the air terminal, and it's never touched again until the container is opened at the destination.

The loader is essentially a tubular steel truss frame hoist, caster-mounted, designed to attach to the air-

plane door. Two chain-driven lift carriages raise and lower the loads. The lifting capacity is 1,500 lbs, with hoisting speeds averaging six inches a second. Power is from the airplane's electrical system.

Two men operate the expediter. They control raising and lowering from a control panel mounted on the left side of the frame.

The containers are shaped to the contour of the cargo compartment. As each one is raised into the airplane, a conveyor inside the cargo compartment moves it to its proper position. This conveyor is also operated from the control panel on the hoist. Safety switches prevent unloading when the hoist isn't in position.



Jervis B. Webb Co.

**BAGGAGE EXPEDITER** loads fiberglass containers into Boeing 707 cargo compartment. Containers are

8x3x3 ft. Each holds 35 average pieces, more than an entire DC-3. There are nine of them in each 707.



# GAYLORD IS INSTRUMENTAL IN CONTROLLING PACKAGING COSTS

Gaylord plays a vital role in reducing costs throughout your packaging operation. Talented G-men study your needs with a trained eye, recommend packaging in perfect harmony with your objectives . . . from a full score of services in new packaging developments and engineering techniques.

Call your G-man. He can give you the right key . . . whether you need corrugated boxes by the millions or engineered packaging.



**GAYLORD**  
CONTAINER CORPORATION



HEADQUARTERS, ST. LOUIS  
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**



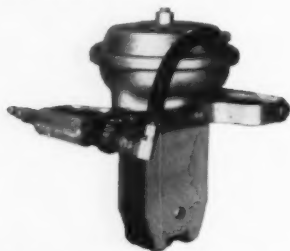
## NEW PRODUCTS

### PNEUMATIC STRETCHER



Featuring adjustable controlled tension. Tool takes various size strapping . . . operates well on small surface. Write: Dept. 38, A. J. Gerrard, 1960 Hawthorne Court, Melrose Park, Illinois.

### PNEUMATIC SEALER



New effortless double crimp pneumatic sealer provides faster, positive sealing action. Write: Dept. 27, A. J. Gerrard, 1960 Hawthorne Court, Melrose Park, Illinois.

### STRAP CUTTER

Cuts strap to 2" x .050 with less effort. Legs on lower handle provide extra stability. Long handles give greater operator safety. Write: Dept. 22, A. J. Gerrard, 1960 Hawthorne Court, Melrose Park, Illinois.



### DIAL-A-BAND DISPENSER



Set the dial and press a button—new dispenser automatically feeds and cuts exact length and number of straps needed. Write:

Dept. 63, A. J. Gerrard, 1960 Hawthorne Court, Melrose Park, Illinois.

Circle 57 on Reader Service Card



COAL IS DUMPED into ground level hopper. It feeds coal to conveyor belt, moves 20 tons in 6 minutes. Gravity-fed rubber belt raises coal 50 feet to storage bins. The belt handles up to 3½ tons of coal per minute.

Small storage facilities and large orders require . . .

## Fast Truck Unloading Hurries Coal Orders

A TRUCK unloading method is accomplishing fast coal handling for a New York retailer.

The Burnside Coal Co. was glad to learn it could sell as much as 1400 tons a day. It wasn't so happy with its storage capacity of only 2000 tons.

Burnside hired Joseph Obstler Associates of New York City to revamp the plant layout so they could unload from trucks, rail, and barges.

Their handling answer is this. A 20-ton truck brings in a load of hard coal. It backs up to a ground hopper and dumps. Within six minutes, a continuous conveyor raises the coal 50 feet in a 202-foot run to storage bins.

An operator swings a chute to the bin being filled. Eight trucks an hour (160 tons) can be unloaded. There is waiting space in

the yard for 16 trucks.

The conveyor belt is operated by a 15-hp motor. It carries 3½ tons of coal per minute. Controls for the belt are located at the truck receiving end and at storage bins. The belt runs over self-greasing idlers. They need servicing only twice a year.

They unload rail cars with portable conveyors. Coal is carried from cars to the same ground-level hopper that the trucks use.

In addition to faster unloading and preparation for retail sales, the new system keeps degradation (breaking up of the coal into smaller pieces) to less than 1½ percent.

Only 3 men are needed for in-and-out truck weighing, for unloading the trucks, railroad cars, and barges, and for withdrawing for retail deliveries.

Circle 102 on Reader Service Card for more information

# POWERFUL PULL

to open or close  
any freight car door  
in 20 seconds or less!



## ONE MAN CAR DOOR OPENER

SAVES TIME . . . SAVES LIVES . . . SAVES MONEY!

The Nolan Model H One Man Car Door Opener has been in successful use for many years, by thousands of companies who recognize its exclusive features of speed and safety. This popular tool enables one man to do by himself what formerly required the time and assistance of several men, usually taken off other jobs, to tug and yank while risking mangled hands, strained backs and other serious injuries. With a few quick pulls on the anchor chain as shown here, one man can get the most stubborn door rolling and wide open in a jiffy.

It will keep men working steadily and safely without exposing them to the hazards present when make-shift methods are used to open car doors. Note above how operator is away from the front of the door . . . away from its injurious, killing effects if it should fall!

Order one or more Nolan Model  
H Car Door Openers Today!

The Nolan Company 110 Pennsylvania St., Bowerston, Ohio

ONLY  
**\$45.00**  
EACH

F.O.B. Bowerston

## YOUR BEST MOVE IS TO MOVE WITH MERRILL MATERIAL HANDLING DEVICES



3R5

For Interesting Information write

## MERRILL BROTHERS

56-74 Arnold Ave., Maspeth, N. Y.

Circle 88 on Reader Service Card for more information  
JULY, 1959

Circle 94 on Reader Service Card for more information

## Multistamp Stenciling System STOPS Freight Addressing ERRORS

at JOHNSON & JOHNSON

Shipping address errors are virtually eliminated when printed directly on cartons by the Multistamp Stencil Duplicator. Print becomes identical smear-proof permanent part of every carton in shipment. Quantity users now save big money on VOLUME-PAK stencils . . . either plain or FORM-CUT. One-day service on repeat FORM-CUT stencil orders . . . less than 10 days on new orders.

**MULTISTAMP**  
STENCIL DUPLICATOR

THE MULTISTAMP CO. Norfolk, Va.



Cartons addressed accurately, identically as dollyes roll to shipping dock. Average 1 1/3 sec. per carton . . . one man—one hand—operation.



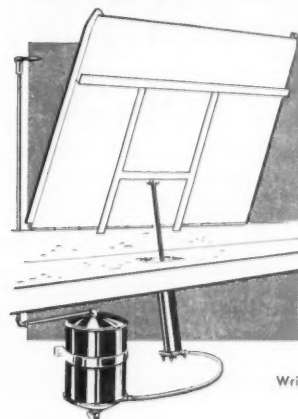
Write Today for your free copy of the illustrated new how-to (and why) book about the Multistamp Marking Methods.

IT'S **New!**

Always ready—raises and lowers quickly  
by ONE "UP"—"DOWN" valve.

## AERO-BOARD

### AIR-POWERED HYDRAULIC DOCKBOARD



- EASY TO INSTALL—No electrical installation—just simple air pipe connections.
- Uses normal terminal air system for power—up to 24 Aero-Boards activated by one 40-60 gallon air receiver tank and compressor unit.
- Kit complete with 57" L x 60" W safety tread steel board, continuous hinge, mounting plate, hydraulic cylinder reservoir tank, valve, brackets.
- Two Models—one for docks with permanent bumper—one for flush docks.
- Safe—Aero-board can't slip—one-man operation.
- Economical to purchase—inexpensive to install.

Write for complete specifications and name of nearest dealer.

Sold and serviced by selected Materials Handling Equipment dealers.

Manufactured by

## FREIGHTLINER CORPORATION

P. O. BOX 3591, PORTLAND 8, OREGON

Circle 53 on Reader Service Card for more information



## **SORTS AND PALLETIZES BOXES OR BAGS . . .**

*(Continued from page 53)*

system for handling each.

### **Mechanical Palletization Handles Cases**

The shipping cases of packaged sugar (net weight of 24 to 60 pounds) are conveyed from various production stations. They are accumulated by type on 4 lines of live-roll conveyors. As lines fill up, the cases are directed automatically into either or both of

two mechanical palletizers. They build up successive layers of cases into pallet loads according to set patterns. Rates are 30 to 35 cases a minute, depending on size and pallet pattern.

### **Bales Are Easily Palletized**

Paper bales weighing 60 pounds (either twelve 5-pound bags, or six 10-pound bags) of granulated sugar are conveyed directly from production to 3 mechanical pallet-loaders. Two loaders are in full use. The third is for standby, and for palletizing such other items

as bales of thirty 2-pound units, or six 10-pound cloth bags. These pallet loaders handle bales at a rate of about 25 a minute.

### **Paper Bag Palletizing**

All 50 and 100 pound bags pass through a sorting station on the way from production to the pallet loaders. A General Electric static control system and an operator at a console controls the sorting. The operator signals the identity of each bag. They are automatically routed to any one of 6 accumulator lines by the static control system, at rates up to 30 bags a minute.

As each bag reaches its selected transfer point on the live-roll conveyor, it is automatically transferred to the correct accumulating conveyor by continuously running V-belts. They are positioned between the rolls of the main trunk line.

There are 10 bag-accumulating lines feeding into 3 pallet loaders. Six operate through the sorting station. Four bag lines run directly from production. These include two 25-pound lines. Bags are held on the accumulator lines until there are enough to form pallet loads. The bags are directed automatically into one of the 3 pallet loaders. Palletize rates: 30 bags a minute for 25-pound bags, 25 a minute for 50-pound bags, and 20 a minute for 100 pound bags.

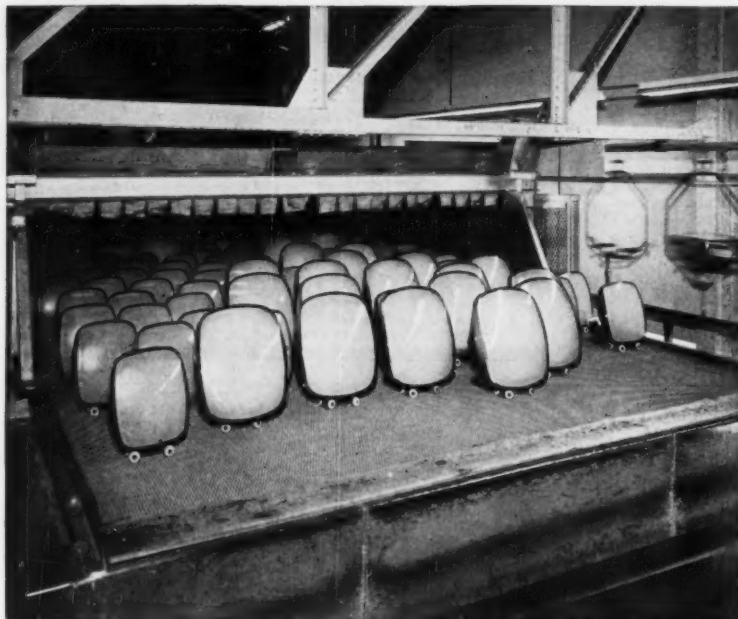
### **Mechanical Pallet Loaders**

Eight pallet loaders are in a central area on the second floor of the warehouse. About 7,300 feet of conveying equipment brings packaged sugar from packing stations on the second, third, and fourth floors of the refinery. Nearly all the sorting and accumulating lines are suspended from roof trusses, about 40 feet above first floor warehouse storage.

Five pallet loaders handling bales and cases and 3 bag pallet loaders face each other on opposite sides of a common loaded pallet conveyor. Stacks of empty pallets are brought to the palletizer floor by automatic elevator. They are moved by fork truck to empty pallet storage magazines in each pallet loader.

As packages flow into the pallet

## **Keep Your Product on the Move**



*TV tubes emerge from a bake-out oven on a 12' wide Ashworth Belt*

## **with ASHWORTH METAL PROCESS BELTS**

Every industry has its problem of moving materials during processing. Fabricated from any metal capable of being formed into wire, Ashworth Belts provide a conveying medium permitting processing in transit through temperatures from  $-50^{\circ}$  to  $2100^{\circ}$  F. Wherever your product must go during processing, be sure to get the "right" belt for the job . . . consult an Ashworth engineer.

Ashworth Metal Process Belts can help you effect economies . . . and keep your product on the move.

*Illustrated literature available*

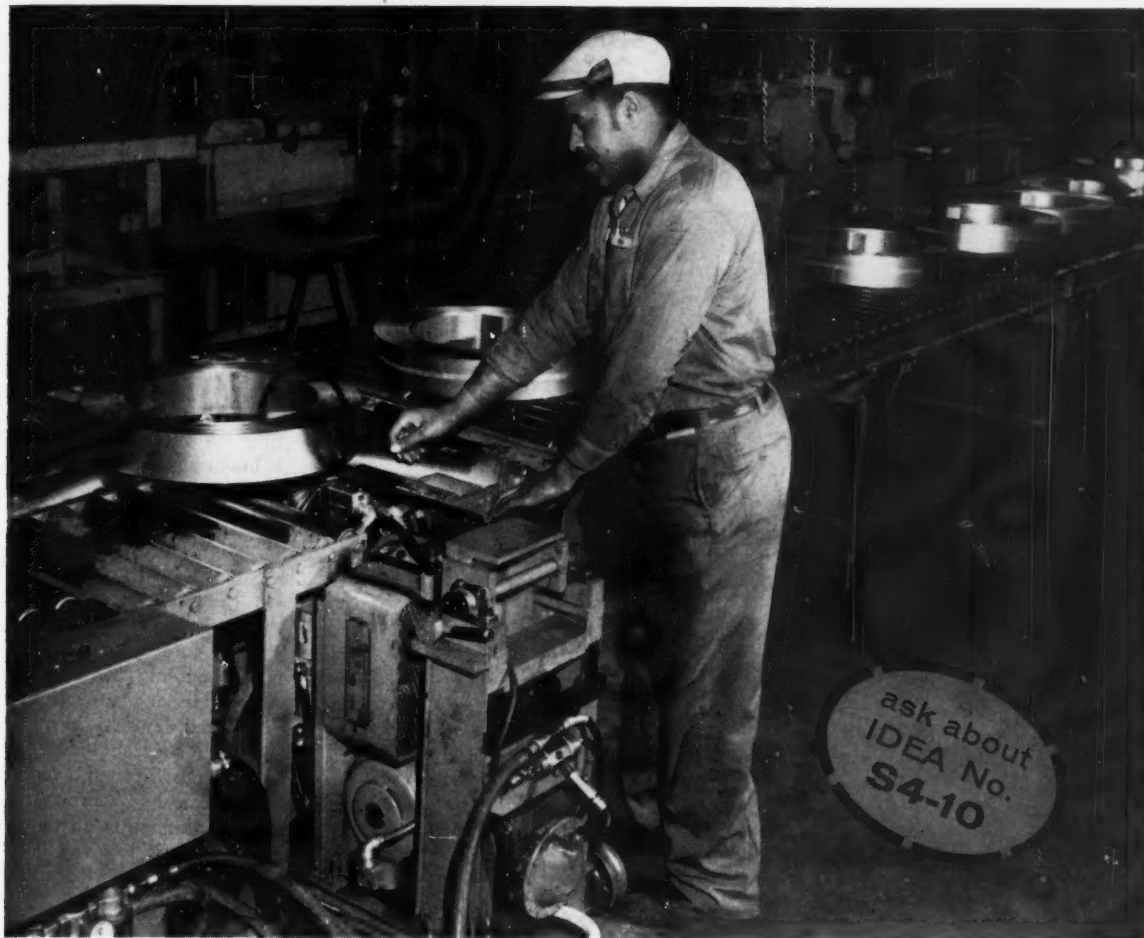
**ASHWORTH BROS., INC., WINCHESTER, VIRGINIA**



**SALES ENGINEERS:** Atlanta, Baltimore, Boston, Buffalo, Charlotte, N. C., Chicago, Cleveland, Dallas, Detroit, Fall River, Mass., Greenville, S. C., Louisville, New York, Philadelphia, Pittsburgh, Rochester, St. Louis, St. Paul, Tampa, Canadian Rep., Peckover's Ltd., Toronto, Montreal.

Circle 8 on Reader Service Card for more information





ask about  
IDEA No.  
S4-10

Plan with your AIM\*... Edgcomb Steel and Aluminum does ...  
**Powered Machine aids effortless coil strapping**

**EDGCOMB STEEL AND ALUMINUM CORPORATION, HILLSIDE, N. J.,** and their Acme Idea Man developed a faster, easier way to handle and strap heavy coils of steel with the new Acme Steel F4 Strapping Machine and Indexing Table. (Idea No. S4-10)

Now Edgcomb Steel and Aluminum has doubled its coil strapping capacity and saves about eight man-hours per shift. Power lifts the coil above the indexing table top on three tapered rollers that rotate the coil for strap placement. The F4 tensions each strap to predetermined tightness, seals and cuts it. The F4 has unlimited strap feed and take-up, and makes its own seals from a coil.

**\*Plan with your Acme Idea Man.** Backed by Acme Steel engineers, he can help adapt Acme Steel Strapping Machines to your needs. Call him or write: Dept. MJS-79, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois. In Canada, Acme Steel Company of Canada, Limited, 743 Warden Ave., Toronto 13, Ontario.

Acme Idea Man,  
C. A. Lested,  
serves many  
companies with  
time and money-  
saving ideas.



Ask your Acme Idea Man to show you the new 10 minute movie on this equipment.



**STEEL STRAPPING**

Circle 14 on Reader Service Card for more information

# when you want to assure LOW COST PROTECTION



What's more economical—more practical—than a paper bag? Or more *versatile*? They're proving it every day for manufacturers of items ranging from fittings . . . to furniture parts.

Bower Roller Bearing Division of Detroit, Michigan, for example, formerly packed their bearings in chipboard tubes. Now (see above) the company uses paper bags. Result? Impressive savings in packaging materials. Reduced warehousing costs. Faster handling and packaging speeds.

Why not look into the many advantages of putting *your* products in low cost paper bags. Write for free booklet PE-111.



Commercial Packaging  
**UNION BAG-CAMP PAPER**  
CORPORATION

293 BROADWAY, NEW YORK 7, N. Y.

Circle 137 on Reader Service Card for more information

## SORTS AND PALLETIZES BOXES OR BAGS

(continued)

loaders, they are formed into properly interlocked layers by the action of a rotating pin and a ram controlled from a pattern cartridge. A stripper plate then retracts from under the layer, and the layer of packages drops a few inches onto the waiting pallet, which is supported from below. This action is repeated for successive layers until a pallet load is formed and discharged. An empty pallet for the next load is fed into loading position automatically.

### Loaded Pallet Delivery System

Loaded pallets of shipping cases, bales, and bags are transferred automatically from the 8 pallet loaders onto a common loaded pallet handling conveyor. The station operator can select any one of 4 final destinations by setting a switch at each loader. Loaded pallets are directed over the mainline conveyor through turntables to a destination on the pallet loader floor. Or to any one of 3 elevators which lower loaded pallets to the first floor.

Loaded pallets are accumulated at these 4 points, and are picked up by fork truck for delivery to storage. Or they go to loading points for rail, truck, or water transportation.

Since the mechanical palletization facilities form an outlet for the major packaged output of the refinery, an emergency hand-palletization station is provided in case of a system failure. To date, it has only been used for test purposes, or while modifications have been made to the mechanical.

### Benefits

In addition to the more obvious material handling economies, the company points to the following benefits:

1. Reduction in damage to packaged sugar.
2. More uniform and better balanced pallet loads.
3. Easier stacking, and more efficient storage of pallets.
4. Easier and more flexible production scheduling.

# READER SERVICE SUMMARY

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NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

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# MATERIAL HANDLING ENGINEERING

812 HURON RD. • CLEVELAND 15, OHIO

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# MATERIAL HANDLING ENGINEERING

812 HURON RD. • CLEVELAND 15, OHIO

FIRST CLASS  
PERMIT No. 8046  
SEC. 34.9 P. L. & R.  
CLEVELAND, OHIO

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CLEVELAND, OHIO

## PLEASE PRINT

July 1959. Do not use after 10-15-59

Name \_\_\_\_\_ Position \_\_\_\_\_  
Company \_\_\_\_\_ Kind of Business \_\_\_\_\_  
Street \_\_\_\_\_

City	State	Zone	PLEASE SEND ME ADDITIONAL INFORMATION AND LITERATURE ON	ITEMS	CIRCLED BELOW.														
1	26	51	74	181	126	151	176	201	226	251	276	301	326	351	376	401	426	451	476
2	27	52	75	182	127	152	177	202	227	252	277	302	327	352	377	402	427	452	477
3	28	53	76	183	128	153	178	203	228	253	278	303	328	353	378	403	428	453	478
4	29	54	77	184	129	154	179	204	229	254	279	304	329	354	379	404	429	454	479
5	30	55	78	185	130	155	180	205	230	255	280	305	330	355	380	405	430	455	480
6	31	56	79	186	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481
7	32	57	80	187	132	157	182	207	232	257	282	307	332	357	382	407	432	457	482
8	33	58	81	188	133	158	183	208	233	258	283	308	333	358	383	408	433	458	483
9	34	59	82	189	134	159	184	209	234	259	284	309	334	359	384	409	434	459	484
10	35	60	83	190	135	160	185	210	235	260	285	310	335	360	385	410	435	460	485
11	36	61	84	191	136	161	186	211	236	261	286	311	336	361	386	411	436	461	486
12	37	62	85	192	137	162	187	212	237	262	287	312	337	362	387	412	437	462	487
13	38	63	86	193	138	163	188	213	238	263	288	313	338	363	388	413	438	463	488
14	39	64	87	194	139	164	189	214	239	264	289	314	339	364	389	414	439	464	489
15	40	65	88	195	140	165	190	215	240	265	290	315	340	365	390	415	440	465	490
16	41	66	89	196	141	166	191	216	241	266	291	316	341	366	391	416	441	466	491
17	42	67	90	197	142	167	192	217	242	267	292	317	342	367	392	417	442	467	492
18	43	68	91	198	143	168	193	218	243	268	293	318	343	368	393	418	443	468	493
19	44	69	92	199	144	169	194	219	244	269	294	319	344	369	394	419	444	469	494
20	45	70	93	200	145	170	195	220	245	270	295	320	345	370	395	420	445	470	495
21	46	71	94	201	146	171	196	221	246	271	296	321	346	371	396	421	446	471	496
22	47	72	95	202	147	172	197	222	247	272	297	322	347	372	397	422	447	472	497
23	48	73	96	203	148	173	198	223	248	273	298	323	348	373	398	423	448	473	498
24	49	74	97	204	149	174	199	224	249	274	299	324	349	374	399	424	449	474	499
25	50	75	100	205	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500

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6	31	56	181	256	381	406
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9	34	59	184	259	384	409
10	35	60	185	260	385	410
11	36	61	186	261	386	411
12	37	62	187	262	387	412
13	38	63	188	263	388	413
14	39	64	189	264	389	414
15	40	65	190	265	390	415
16	41	66	191	266	391	416
17	42	67	192	267	392	417
18	43	68	193	268	393	418
19	44	69	194	269	394	419
20	45	70	195	270	395	420
21	46	71	196	271	396	421
22	47	72	197	272	397	422
23	48	73	198	273	398	423
24	49	74	199	274	399	424
25	50	75	200	275	400	425



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### PLEASE PRINT

Name \_\_\_\_\_ Position \_\_\_\_\_

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25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500

MODEL A

## FOR LOW COST MATERIAL HANDLING

MODEL B

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### THEY'RE REUSABLE

- Economical
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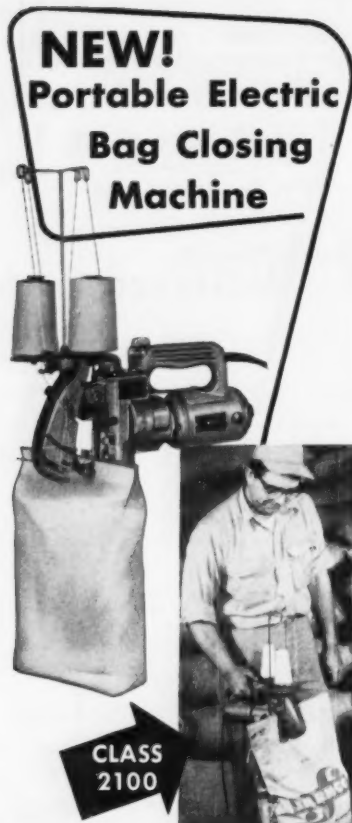
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lumber company

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**Portable Electric**  
**Bag Closing**  
**Machine**



**CLASS 2100**

**H**ERE is a handy little machine that makes bag closing fast, easy, and economical. It is recommended where operations are limited or intermittent and do not justify installation of large, high production machines.

**LIGHTWEIGHT**—9½ pounds. Carry it anywhere. No installation; requires only an electrical outlet.

**POWERFUL**—Exclusive top and bottom feed for greater power and production. Direct drive motor with thumb control button.

**VERSATILE**—Closes bags made of cotton, burlap, jute, multiwall paper, laminated paper. Produces two-thread stitch Type 401, or can be furnished to produce single-thread chain stitch Type 101.

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**MACHINE COMPANY**

Originator of  
 Filled Bag Closing Machines  
 415 N. Franklin St., Chicago 10, Illinois

## PUSHBUTTON STORAGE EXPEDITES DELIVERIES . . .

(Continued from page 51)

(more if you consider modifications) are stored. Each motor is placed on a ¾ inch plywood base and stored according to whether it is a large load or small load.

Normal weight of the large loads is 600 pounds, with a maximum of 900 pounds. Large-load compartments rise eight high. A 42-inch aisle between racks is all the handling room required.

Small loads are stacked 12 high. They have a maximum weight of 250 pounds and are handled in 30 inch aisles.

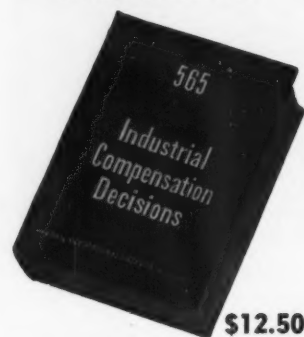
Motors and parts are ordered on inventory basis from the producing divisions of Reliance. Company owned open-top trailers deliver motors for stock daily. A wall mounted traveling jib crane is under development by Hoist Equipment Co. for unloading the trucks. This crane will have 10-foot hook coverage and travel on a 60-foot runway. With a one-ton capacity the crane will move the motors to the in-bound conveyors of the storage unit. A gravity roller conveyor handles the small motors while a powered roller conveyor carries the large motors.

Before sending the motors off on the conveyors, the truck unloader tags them. He uses a two-part tag; the top has the tag number and the bottom has space for model number, serial number, location, and shipping sales order number. The unloader fills in model number, serial number, and date, and sends the motor along the conveyor to the put-away station. This is a mechanical transfer device from the conveyor to the storage Retriever.

The storage operator has a tag file that tells him which compartments are empty. He writes the compartment number on the bottom half of the motor tag and sends it to the office. The top half of the tag and the compartment tag stays with the motor. Then the operator presses the keys on the console that send the motor to the proper compartment.

In the office the information on the tag is matched against the

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## Correction

The corrugated box shown below was incorrectly identified in the article "Fibre Box Competition Winners" (MHE, June '59, p. 125). Gold Award Winner in

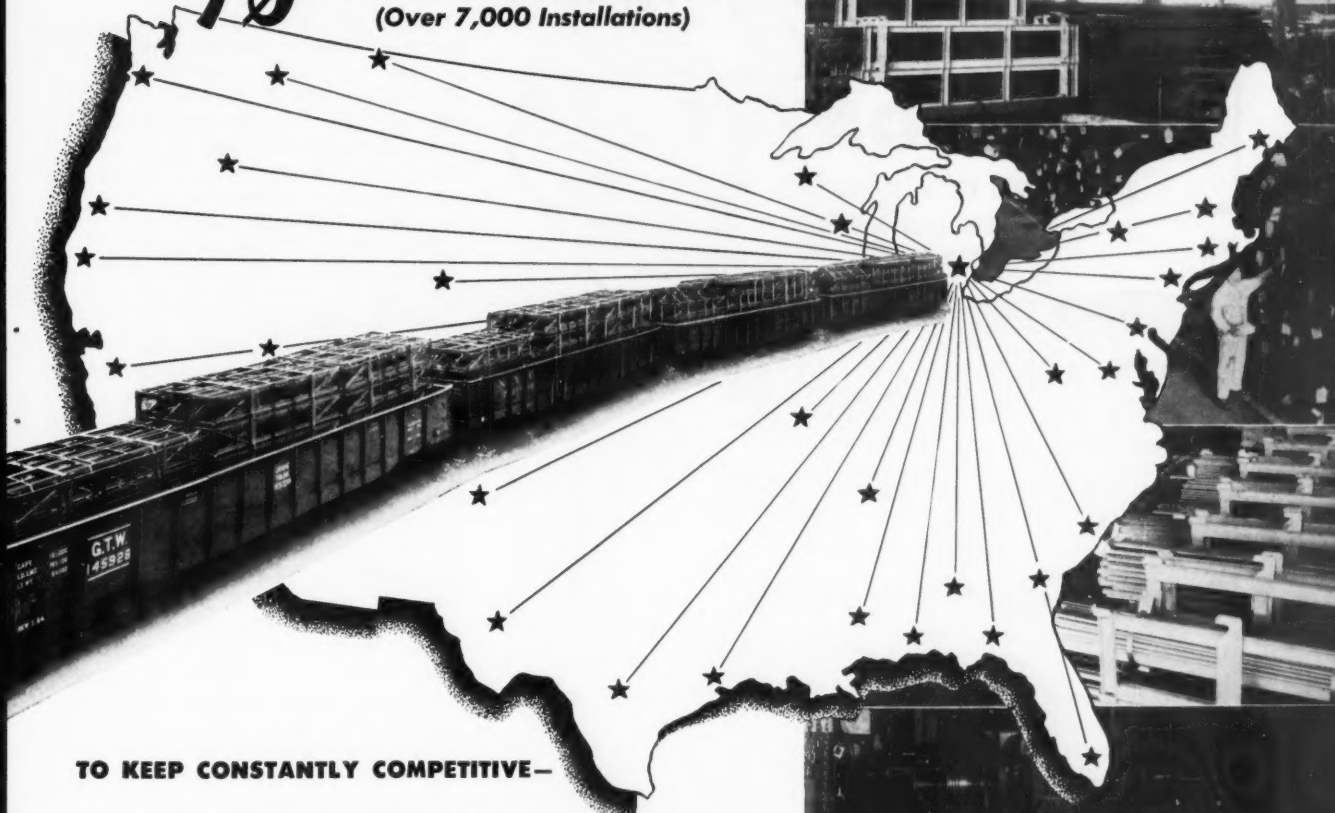


the classification "Other Food Products", this box was made by International Paper Co. for National Dairy Products. MHE mistakenly said it was made by Container Corp. of America for Foremost Dairy.

Nation's Leading Companies from Coast to Coast  
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# P-S<sup>®</sup> BAR RACKS..

(Over 7,000 Installations)



## TO KEEP CONSTANTLY COMPETITIVE—

This record speaks for itself — more than 7,000 Palmer-Shile Portable Heavy Duty Bar Rack installations made for the nation's leading companies. These companies realized the importance of maintaining their competitive position by eliminating inefficient time and money wasting materials handling methods. They found the answer in P-S Bar Racks, engineered for specific requirements to handle any kind of bar, sheet, pipe, tubing, lumber, large and small—light and heavy materials, quickly and easily without loss or damage to stock. You can tier to any height to save valuable floor space, and each rack is readily accessible for stock selection. Act today! Call in Palmer-Shile engineers to explain how P-S racks will help you keep your operation constantly competitive.

★ Indicates a few of the over 7,000 installations made in every part of the country. Name of company with Bar Rack installation nearest you will be sent on request.

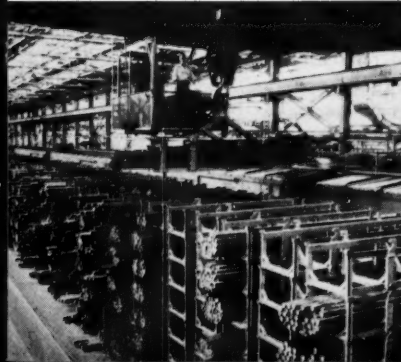
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# NOW... "custom plan" your conveyor system with Standard

## HANDIDRIVE

and Standard units for complete belt, "live" roller and gravity roller set-ups



Handidrive conveyors are made up of pre-engineered standardized units, such as drives, take-up units, end roller assemblies, intermediate framework, supports and hangers.

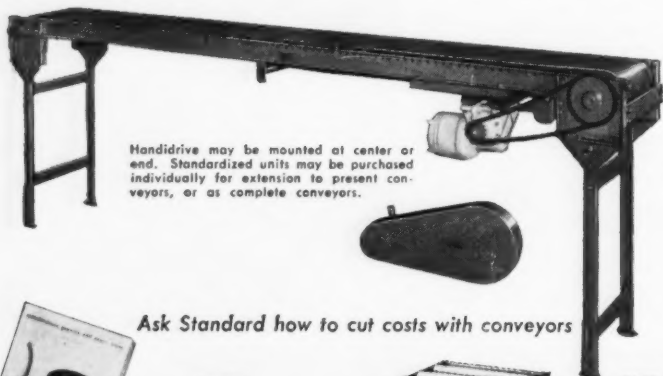
**Easy to engineer and install  
... at low cost**

You can assemble and build a system "custom-planned" to suit your individual needs with Handidrive and other Standard units available out of stock. This service enables you to adapt and change the system from time to time to meet varying requirements as they arise, at exceptionally low cost.

Handidrive conveyors may be

individually leveled or inclined. Independent units may be purchased separately to construct power conveyors as desired.

Let Standard show you how to build or convert your own conveyor systems with Handidrive. Write: STANDARD CONVEYOR COMPANY. General Offices: North St. Paul 9, Minn.



Handidrive may be mounted at center or end. Standardized units may be purchased individually for extension to present conveyors, or as complete conveyors.

Ask Standard how to cut costs with conveyors



**GRAVITY & POWER  
CONVEYORS**

Sales and Service in Principal Cities



Send for Handidrive  
Bulletin No. 64.  
Write Dept. A-7.

Circle 123 on Reader Service Card for more information

## PUSHBUTTON STORAGE EXPEDITES DELIVERIES

(continued)

items on the truck's shipping list to make sure the right motors have been received. Then the card is placed in a stock record file. Every other week a stock list is compiled from the cards and sent to the district offices to keep them informed of what stock is on hand.

Orders come in from the district offices by mail, wire, or phone. If by mail, they are on a requisition form; if by phone or wire, the form is typed at the center. The stock record file tells the exact location of every motor in storage. The location number is put on the form.

The order goes to the shipping clerk who selects the proper model from the tag file. He writes the sales order number on the tag. Tags and sales orders go to the foreman who checks model numbers. Foreman gives the tags to the Retriever operator who punches selector keys for the motors wanted. When each motor is retrieved, the foreman checks the motor's tag against the order. The shipping clerk also matches the tag and order before the motor is loaded onto the truck.

Reliance can deliver to any point in the U. S. within 24 hours if necessary. All routine orders are shipped the same day if so specified. Emergency orders are handled by a district salesman calling or wiring the distribution center. The motor can be pulled from stock in 15 minutes so that an air freight truck can rush it to the airport. The district office is advised by wire which plane the motor will be on.

Reliance lists the following advantages of the push-button storage system:

1. Better material handling. Workers do not have to lift motors off a stack to get at one underneath.

2. Better inventory control. The location of every motor is pinpointed on the stock records.

3. Storage area for the motors now in the racks has been cut in half. The company formerly could only stack four high, using twice the floor space. 11,000 sq. ft. were used, now 5000 sq. ft. are used.



## LABOR RELATIONS IN MATERIAL HANDLING ENGINEERING . . .

(continued from page 52)

their interests. If he is uninformed, union members may come to doubt his ability.

As plans develop, prepare descriptions for each job, evaluated and classified according to content. Complete staff rearrangements in detail.

Changes in layout, changes in methods, and buying new equipment are almost synonymous with cutting operating cost. Operating cost is cut by increasing the man-hour output. This may or may not result in decreasing the manpower employed.

After you set the number of jobs and their contents, then set the tentative classification and rate for each. Work out a schedule of assignment with the superintendent and other executives. Pick a man from the list of regular employees for each job under the new program. Keep your eyes open. Be aware of potential problems while you're making your plans. Then, when your studies are completed, and your tentative plans drawn, it is time to call the union representatives.

### Don't Present A Single Package

It is neither necessary, nor advisable, when dealing with either union representatives or employees, to perfect every detail before presenting the whole program.

You must take care to release the details in the right sequence. Allow time for the listener to absorb and understand. That will help gain his acceptance.

### It Takes Time To Prepare For Change

Even if labor relations are good, it will take time to prepare everyone for the change. If you think your labor relations should be improved, it's better to discover it early. Good labor relations have to be maintained with a continuous plan. Call it preventive maintenance if you wish. The same understanding of human behavior (handling people with care and respect) is as necessary to the job as are efficient tools.



## SILENT HOIST KRANE KAR

HYDRAULIC Boom Swinging,  
HYDRAULIC Topping, HYDRAULIC  
Telescoping, HYDRAULIC Load  
Hoisting! Fluid Drive, Power  
Steering. 5 sizes: 1½, 2½, 5,  
10 and 12½ ton capacities.  
Ask for Bulletin No. 79.

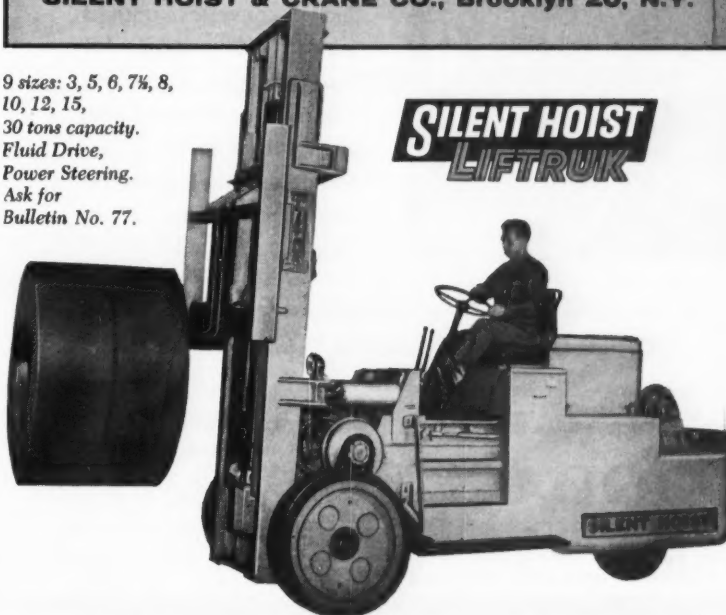
suddenly  
everything gets done faster,  
better—at savings!

Just add a SILENT HOIST KRANE KAR or LIFTRUK to your materials handling program—then watch them accelerate your Receiving, Production, Shipping and Plant Maintenance operations! With today's competitive markets and rising labor costs, SILENT HOIST helps you increase your output per man . . . lowers your production costs! Worth looking into?

SILENT HOIST & CRANE CO., Brooklyn 20, N.Y.

9 sizes: 3, 5, 6, 7½, 8,  
10, 12, 15,  
30 tons capacity.  
Fluid Drive,  
Power Steering.  
Ask for  
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## SILENT HOIST LIFTRUK



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# "HI-CLIMBER"...

*Keeps Them  
Moving...*

**NO SLIPPING  
OR SLIDING...**

*On Inclines  
to 40°*



## "HI-CLIMBER"

has a tough, diamond-pattern, non-slip surface that keeps packages of all kinds firmly in place while being carried on incline conveyors angled up to 40°. Used for handling heavy cartons, boxes, baskets, bags, cans, etc., with the consistent reliability that means lower conveying costs. Widths up to 44".



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Circle 59 on Reader Service Card for more information

## GOOD HANDLING SAVES FRUIT CROPS . . .

(Continued from page 60)

Two more conveyors run in a 180-foot subfloor tunnel, 8 feet wide, 7½ feet high. They carry rejected grapes and empty field lugs to outside stations.

### Electric Eye Control

Even though 12 packing lines send filled boxes and empty lugs toward these 2 oppositely-moving service conveyors running past the ends of the line, there are no traffic jams. That's because the lines are controlled by electric eyes that halt the flow of packing line boxes at service conveyor intersections when the service conveyors are filled.

A single incoming line brings field lugs between 2 packing lines. The conveyor has mechanical lift-ups. Packers work them by foot pedals. The lifters tilt the fruit-filled lugs, sends them sliding to the right or left onto inclined racks within reach of packers. When a lug is empty, the packer slides it off the supporting rack bars. It drops to the removal conveyor.

Next to the packing lines there is a palletizing zone. Here storage pallets are loaded 7 high with filled lidded boxes, ready for storage.

Before each stack of 7 is added to the pallet, a 2-inch-wide separator panel is placed alongside the preceding stack. It is removed when the next stack is completed, leaving the 2-inch separation between the cases. This allows the chilled air to flow freely between. Jets at the ceiling shoot shafts of cold air between the separations.

Special box-lid cleats assure a firm footing for the boxes even though stacked. Loads of boxes ride the fork lifts without risk of upset. And in the storage room they can be stacked ceiling-high without tie-down.

You can get an idea of the production capacity of this plant from its 10 precooling rooms. Each holds 2½ carloads of packed grapes. There is a battery of 3 cold-storage rooms (32 degrees) that have a total capacity of 115 cars.

Fork lift transports keep the

palletizing floor clear at all times. Portable roller conveyors curve right and left and lead to freight car loading stations.

### Car Loading

Four loaders, 2 bracers, and 6 helpers (including 2 tally girls) are required to load and secure a car. The job takes 1 hour. Packing Plant Manager Bradley Hamilton considers this loading arrangement to be antiquated. He wants an automatic or semi-automatic system. He thinks it might do the work in a fraction of the time.

Loading highway trucks is easier. Boxed fruit is given a straight run into the truck backed up to the shipping dock.

DiGiorgio found that cooled grapes became skin-blemished as they were moved through a shipping door into a waiting refrigerated truck. The hot air outside seeped between the door frame and truck, affected the grape skins. DiGiorgio developed a massive sponge rubber door frame to seal out this hot air.

A tilt conveyor is used to dump stray grapes from the empty field lugs as they move outside the plant on belt conveyors carrying them across the shipping yard to a field palletizing station. The loose grapes fall upon a cull conveyor that loads bin trains with grapes destined for a nearby DiGiorgio winery.

Mechanization led to development of 3 basic sized pallets to meet requirements for handling field lugs serving packing lines; open boxes of field pack grapes; and house pallets holding fruit in cold storage. Within the plant, 1,800 pallets are used. And 900 field pallets equip fruit pickup trucks.

Before mechanization, all loads within a packing shed were hand-trucked. Before field and plant palletization, fruit lugs were hand-moved, box-by-box. Before total conveyorization, all empty lugs as well as cull fruit, were removed by hand from packing lines.

For information on any item advertised in this magazine, use the Reader Service Card between pages 82 and 83.

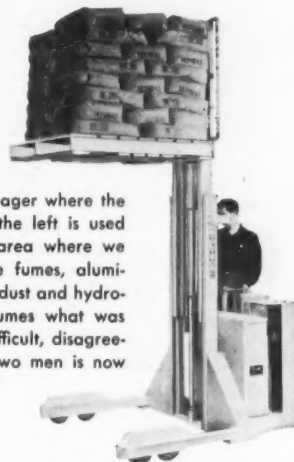
## EXPLOSION PROOF CLASS I GROUP D POWERED LIFT TRUCKS

# APPROVED and PROVEN



**8 YEARS  
ON THE JOB**

Since 1951 Revolvator Go-Getters, designed for this service, have been specifically approved by leading industrial insurance companies for use in Class I Group D explosion hazardous areas in major plants from coast to coast. User comments like those below show that the Go-Getter has been more than approved by safety authorities... it has been proven in use for eight years.

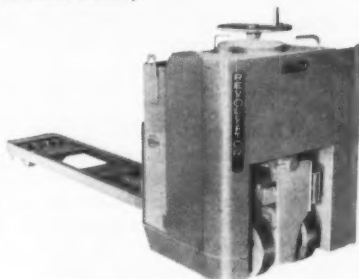


The Plant Manager where the Go-Getter at the left is used says, "In an area where we have explosive fumes, aluminum chloride dust and hydrochloric acid fumes what was previously a difficult, disagreeable job for two men is now easy for one."



Air in the color mixing room of the finishing plant where the Go-Getter above is used carries organic dusts as well as explosive fumes. The foreman says, "The men like the Go-Getter and use it steadily."

Executives in the chemical plant where the model to the right is used say, "We use the Go-Getter in our area which has the most severe hazard." Another plant where quantities of explosive solvents are used for "wash down" reports of a similar model, "We are well pleased and we are ordering another Go-Getter."



A major insurance association writes, "We are quite willing to accept the unit (Go-Getter) as it is designed with explosion proof housings for the motors and controls as usually specified for electrical equipment that can be safely used in explosion hazardous areas."

A nationally known safety engineer writes, "... calling the existence of this line of trucks to the attention of the industry as we believe many would want to know about this equipment."

The Go-Getter is the latest addition to a complete line of materials handling equipment for use in explosion hazardous areas that Revolvator has been building for over a quarter of a century.

## REVOLVATOR CO.

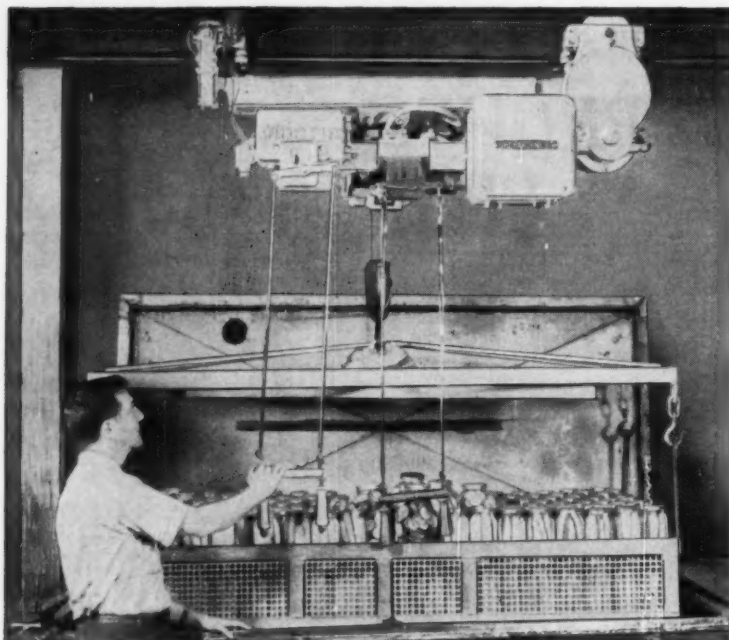
8739 TONNELE AVENUE, NORTH BERGEN, N. J.

SINCE 1904

Circle 113 on Reader Service Card for more information



# 10 ~~x~~ years' service



A SHEPARD NILES Hoist on a motor-driven trolley handles 750 dozen quarts of pickles daily at LOUIS SHUPAK CO., Philadelphia, leading processor of pickles.

## and not a single breakdown on this SHEPARD NILES Hoist

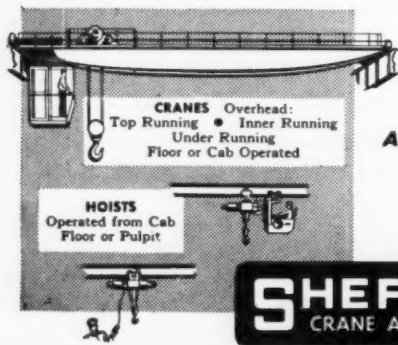
For the past 10 years, this 1/2-ton Shepard Niles Hoist has been in constant operation at Louis Shupak Co., Philadelphia, well-known pickle processing concern.

During this decade, the hoist has never lost a minute of production time due to a breakdown, nor required any major repairs or replacement parts. It set this record of unbroken production with only a minimum of preventive maintenance.

This is the kind of service you expect—and get—with a Shepard Niles Hoist: dependable, economical performance that continues long after it has repaid your investment.

Whatever your requirements in the way of capacities, speeds, lifts, clearances and controls, you'll find exactly what you need among the most complete line of hoists in America—by Shepard Niles.

For more detailed information, write for the Shepard Niles Hoists Bulletin, and ask one of our representatives to call.



**America's Most Complete Line of Cranes and Hoists Since 1903**

**SHEPARD NILES**  
CRANE AND HOIST CORPORATION

2787 Schuyler Ave., Montour Falls, N.Y.

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## DOCK LEVELERS vs. TRUCK LEVELERS . . .

(Continued from page 72)

ical. It operates by the action of the truck backing against a bumper arm extending out front. It may be counterweighted, spring loaded, or a series of linkages. When the truck pulls away it returns to its normal position.

### Ramp Width Limited

In both types, the ramp width is limited by the size of the truck—usually no wider than 6 feet. And both types may be flush with the dock when not in use, permitting cross-traffic on the dock.

Dock levelers are usually shipped as packaged units. A 20,000-lb capacity hydraulic leveler, platform 6 feet wide and 8 feet long, 18-inch cylinder stroke, costs about \$1,500. A similar mechanical unit would cost about \$1,000. Installation costs for the hydraulic unit are about \$1,200; \$900 for the mechanical.

### Truck Levelers

*Truck levelers* — These are mounted in the pavement in front of the dock. They adjust the height difference between truck and dock by raising or lowering the back of the truck. The ramp is hinged at the front; the back raises or lowers hydraulically. Push button controls are usually mounted close to the dock, at dock level, so the operator can see both truck and ramp for accurate positioning.

Although designs vary, the average truck leveler is about 10 feet wide, 14 feet long, has a 40,000-lb. capacity, and travels 10 inches up and 16 inches down. Such a unit costs about \$2,300 for the basic equipment. A pit and controls installed during new construction would cost about \$3,400. It would cost slightly more to add it to an existing building.

### Cost Comparison:

In most cases a truck leveler costs about \$3,000 more, installed, than a hydraulic dock leveler, and \$3,800 more than a mechanical dock leveler. But these are just initial costs. They don't take into consideration the amount of space the various types take, and the



cost of that space.

For example, four dock levelers take up about 560 square feet of floor space. It's not at all unusual for a plant to have four dock levelers. But consider that this 560 square feet is practically useless for storage. At \$12 to \$15 a square foot it represents a loss of \$6,720 to \$8,400. Add that to the initial cost of the dock leveler to get a true comparison.

#### Disadvantages of Both:

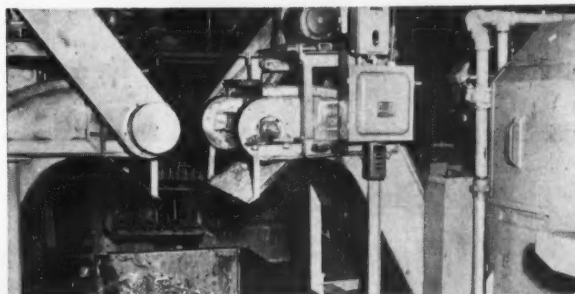
Dock levelers are impractical where the ramp has to raise or lower quite a distance. The steep pitch causes a hump where the lip rests on the truck bed. If it's severe, some low-clearance lift trucks may hang up on it. We have found that a  $\frac{3}{4}$ -inch rise per foot is about all the average lift truck can negotiate with loose or bulky loads. If the load is solidly stacked, a 1-inch rise per foot is safe. To get around this problem, you've got to use a dock leveler with a longer ramp.

Truck levelers are impractical in pits that don't have good drainage. Water and debris collecting in the pit can damage the hydraulic mechanism, or cause parts to rust out. Truck levelers are also impractical where the dock is built over a basement or other obstacle, since they have to be installed underground. However, both of these disadvantages are easy to overcome in the design stage of a building.

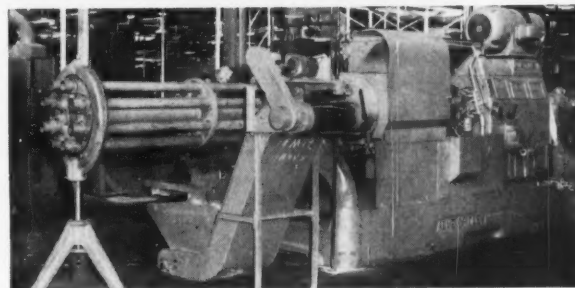
#### Conclusion:

During the last 10 years we have installed 43 truck levelers, 27 hydraulic dock levelers, and 3 mechanical dock levelers in our Western Electric distribution houses. Although truck levelers cost more initially, we feel they save us money in the long run through better space utilization. Therefore the only decision that remains concerns physical limitations. In general we feel that dock levelers can operate without danger of hanging up lift trucks if the dock is close to 48 inches high, and the truck beds are from 43 to 55 inches high. If there are many trucks beyond this range, we prefer truck levelers for safe, efficient material handling.

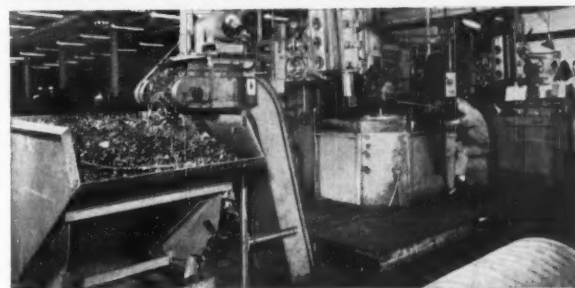
## MAY-FRAN CHIP-TOTES



### PROVIDE AUTOMATIC AND

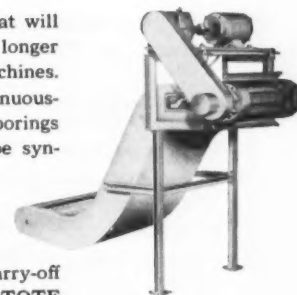


### CONTINUOUS SCRAP REMOVAL



### FROM ALMOST EVERY TYPE AND SIZE OF MACHINE TOOL

Here is a machine tool accessory that will cut production costs, and permit longer "run" times for your automatic machines. The MAY-FRAN CHIP-TOTE continuously removes the chips, turnings and borings from machines. The conveyor can be synchronized with the metal removing capacity of the machine. Scrap is channeled onto the CHIP-TOTE belt, carried clear of the machine for discharge into tote box or carry-off conveyor system. There is a CHIP-TOTE for every machine tool.



## MAY-FRAN

ENGINEERING, INC.

1611 Clarkstone Road, Cleveland 12, Ohio

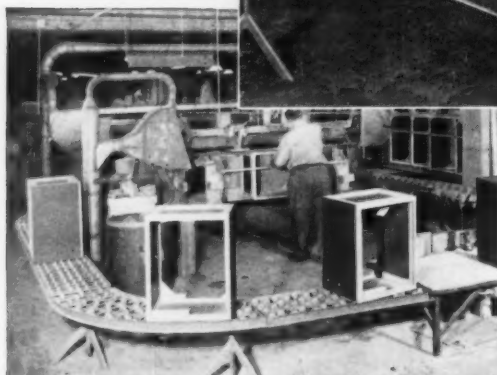
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**Raw  
Meat...**

**Imported  
Wares...**



**Appliance  
Cabinets...  
or what  
have you...**

## Move it fast, safe, sure with **OLSON WHEEL CONVEYORS**

For any production, warehousing, assembly or loading operation, there's an Olson Wheel Conveyor just right for the job.

- All steel or lightweight aluminum models
- Straight sections
- 45 and 90-degree curved sections
- Spur curves
- Flop-over section "Y" branch curves
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- From 6 to 24 wheels per foot
- Temporary and permanent adjustable stands, portable stands, supports
- Reversible power turntable and other conveyor accessories

**Specify**

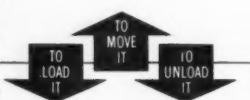
Ask for free Catalog 750C today

# OLSON CONVEYORS

Manufactured by SAMUEL OLSON MFG. CO., INC.  
2426 Bloomingdale Avenue • Chicago 47, Illinois

DIVISION OF CHERRY-BURRELL CORPORATION

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## VIBRATION: WHAT IT IS AND HOW TESTS CUT DAMAGE...

(Continued from page 71)

pounds. The specification calls for a 7-inch stroke at 2 cps and 1.3 G's acceleration. While there are many vibration testing machines on the market, none of them could meet these requirements. Norair engineers decided to make their own.

They decided on a refined version of the already-proved electro-hydraulic shaker principle. What was to be known as the Norair Hi-Capacity Electro-Hydraulic Shaker began to take form.

### Test Procedure:

First the vibrating table shakes part and container through 3 logarithmic frequency sweeps, from 10 cps up to 300 and back down to 10. In an additional sweep from 2 cps up to 300, engineers find the load's resonant frequencies. Next they vibrate it for one-half hour at each of those frequencies. Then the procedure is repeated along the other two axes, completing the test.

When the shakes are over, engineers check the part and its container for any signs of failure. The container may show minor damage, but it must be in good enough condition to protect the load. The part itself must be completely intact.

### Conclusion:

Norair found that the worst violence takes place at the lower vibrating frequencies, particularly when the container has a resonance in the 2 to 8 cps range. Therefore packaging engineers try to build containers with as high a natural frequency as possible without sacrificing cushioning characteristics. Heavy damping is important; free play anywhere causes quick failure. For small parts, cardboard boxes pass the tests without trouble.

The test brought out an interesting fact: vibration gets worse as the parts get bigger. Usually, the larger the box, the better it has to be. Most large containers commonly used today could not pass the test.

## SELECTION AND USE OF ROLLER & WHEEL CONVEYORS

(Continued from page 56)

coefficient between the packages and the rolls). Slope for lowering can be slightly greater if needed. Packages may be stopped and allowed to accumulate on live rollers without excessive wear. And non-powered zones can be created at any point and for any distance for inspection or other operations.

Other types of live roller conveyors are made by using a V-belt to drive the rolls from below by snubbing action. Rollers can also be driven by drive chains through sprockets mounted on the ends of the rollers. Chain drives are particularly useful where a live roller conveyor is needed but heat or grease would harm the belting, or where loads are heavy or distances exceptionally long.

V-belts or chains can be used to drive curved sections.

### Selection Factors

Of first importance in the selection of the proper roller conveyor are the types of packages or articles to be handled and the weights and dimensions of the maximum and minimum size. For smooth operation rolls should be spaced so that there are at least three rolls under the shortest package at all times.

In planning the use of roller conveyors keep in mind that you are setting up a system to move material. Make a survey to determine the material to be handled and the points material will be moved between. Check your proposed flow plan for conflict with partitions, columns, water pipes, and electric lines. Check building changes that will involve fire codes, or insurance charges. Curves can be introduced anywhere in the roller conveyor line to provide layout flexibility.

In general for successful operation on roller conveyors, the bottom of the load must be reasonably hard and flat. New cartons, wood boxes, metal tote pans, and barrels are examples of loads that will flow smoothly. Soft cartons (returnable beer cases), heavy cartons with bottoms deformed by steel straps, wire baskets, and some bales can usually be handled

but may require extra pitch and occasionally manual assistance. Soft bags and bundles, loads with cleated bottoms (cleats parallel with the rolls), and deformed tote boxes probably will not move successfully.

In straight line conveyors, the length of the rollers is governed by the widest package and the loading conditions. With flat bottom items a 3 to 4 inch overhang on each side is considered safe.

To move items wider than the conveyor the rolls must be set high in the side channels. Guard

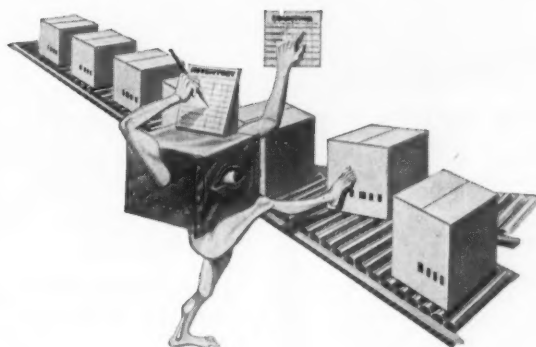
rails can be used if needed. When rolls are placed low in the side channels, the channels themselves act as guard rails. The rolls should be 2 inches wider than the widest load. Sometimes greater clearance is needed for easier, faster loading.

If the conveyor has a curve the width of the conveyor will depend on the width of curve needed to accommodate the largest or widest load. See page 56 for determining required curve widths.

Many roller curves are made with a 2½- or 3-foot inside radius.

# NEW

## AUTOMATIC HANDLING OF PACKAGED GOODS



Reads printed codes automatically.

SELECTIVE automatic counting and sorting of MIXED products are now possible with Atronic's 400 Series transistorized carton selector equipment. Your materials handling can be thoroughly modernized at low cost.

Make your operation a model for the industry . . . a point of company pride . . . and a new source of company profit. Write today for details.

801

ATRONIC PRODUCTS, INC.

BALA CYNWYD, PENNA.

AN AFFILIATE OF GENERAL ATRONICS CORPORATION

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## SELECTION AND USE OF ROLLER & WHEEL CONVEYORS

(continued)

However, unusual loads or conditions require special attention. For example, when a standard radius curve is used with a long, narrow load, the charts will indicate a curve much wider than needed for the adjacent straight sections. A longer radius curve or special offset guard rails will prove economical. On large, wide loads (espe-

cially heavy loads) the force required for turning on a short radius is usually excessive. The gradual action of a longer radius curve requires less force and provides smoother flow.

On a wide curve the spacing of rolls on the outside radius is often too wide for a small package. By using a three-rail curve with a center support for roll shafts, you can get closer roll spacing on the outer half. Packages turn better because the outside rolls can turn faster than the inside ones.

## Rolls and Frames

Conveyor rollers range from  $\frac{3}{4}$  to  $6\frac{1}{2}$  inches in diameter. They have capacities from 50 to 16,000 pounds. Typical capacities are given in the chart on page 55.

Loads of a few ounces or up to 60,000 pounds can be handled on roller conveyors. However, you must make sure that the number of rolls under the load will carry it and that the frames and supports are strong enough.

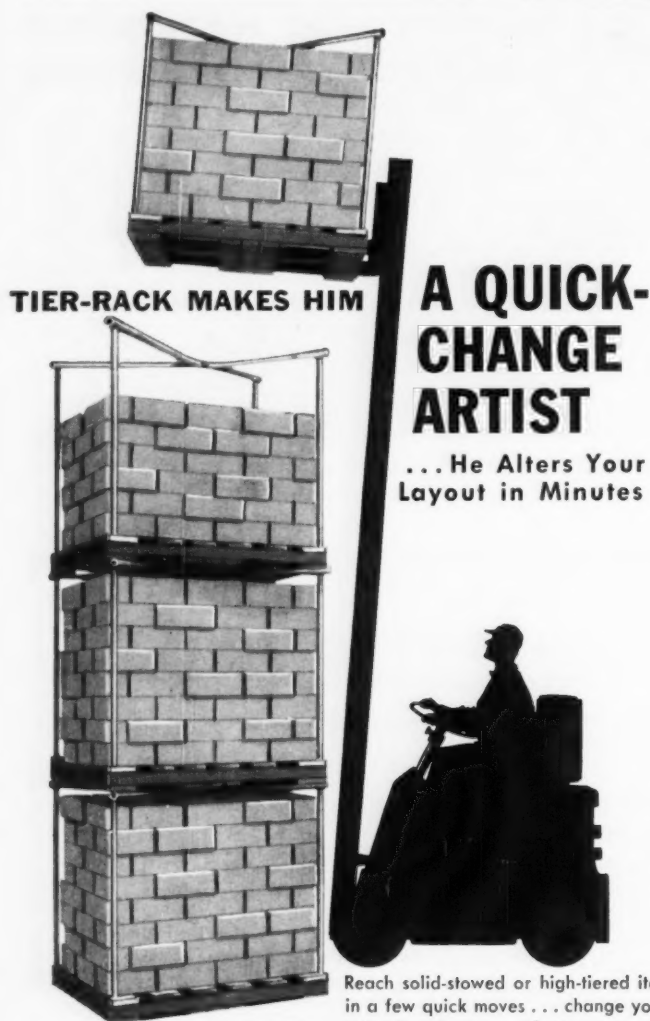
Size of the roll needed depends on the weight of the object being moved plus any shock in loading. In selecting a roller, loading conditions may favor a heavier roll on wide spacing compared to a lighter roll on closer centers. For unusual loading shock or where rolls are extra long, a heavier roll may be needed than the size and weight of the package would indicate. Spring-mounted roller conveyors have made big reductions in maintenance expense in foundries, steel plants, and other places where conveyors are subjected to severe service. The springs are precompressed, function only when individual rollers are overloaded.

## Types of Rolls

Generally rollers are made of welded steel tubing. But changes in roll construction often bring big advantages. For example, rolls with rounded ends are used for handling material that overhangs to prevent damage. Rounded ends are also preferred at intersecting points and where the conveyor is loaded from the side.

Many materials are used for special applications:

- **Fibre covered rolls** are used to prevent damaging the surface of the article being moved. They prevent the discoloration or scoring which might result from direct contact with steel rolls. Fibre covered rolls are often used in handling brass or aluminum sheets.
- **Plastic covered rolls** are used where the rollers must be resilient, and resistant to abrasion and corrosion. They're also used to dampen sound in noisy operations.
- **Concave rolls** are made of gray iron, are used for moving cylindrical objects.
- **Wood rolls** are used where a non-sparking construction is re-



## A QUICK-CHANGE ARTIST

... He Alters Your Layout in Minutes

Reach solid-stowed or high-tiered items in a few quick moves... change your storage setup in a hurry... when you use portable Tier-Rack pallet stacking frames.

Put idle aisles and empty air space to work, too... gain up to 50% more storage room in your present floor area.

Send for booklet TR-8.

**TIER-RACK CORPORATION**  
122 N. 7TH ST., ST. LOUIS 1, MO.



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quired, such as in handling powder or other explosives. They are occasionally used for their slight cushioning effect.

● **Aluminum roller conveyors** are also used because they are non-sparking. In addition they are corrosion resistant, and their light weight makes them easily portable.

#### Frames

Aluminum conveyors (rollers and frames), being considerably lighter than steel, are often selected for their portability. When heavy loads must be moved, just the frames are made of aluminum.

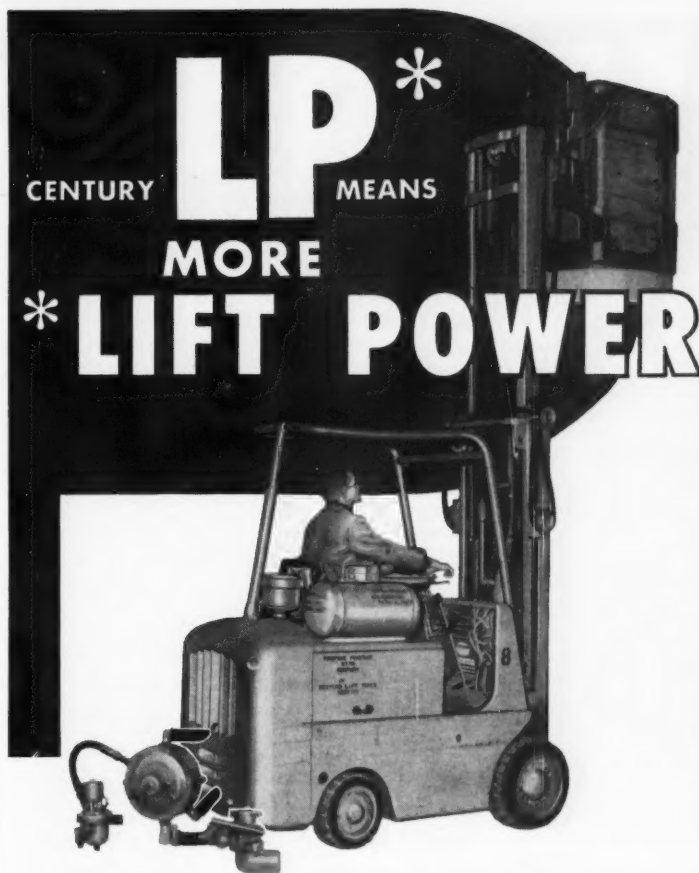
Generally frames are made of steel channels. Guard rails are mounted in a variety of positions depending on the material being moved. Supports are also made of formed steel channels. A floor boot forms a stable base and is adjustable to compensate for the unevenness of floors. Triangular flanged steel gusset plates form a rigid connection with the conveyor. They give equal support to each adjoining section and are adjustable to permit true vertical alignment of the support leg regardless of the slope of the conveyor.

Roller conveyors can be hung from the ceiling with hanger rods to take advantage of valuable air rights. The hanger rods can be hung from wood or concrete ceilings and come in various lengths.

Painted steel conveyors are usually satisfactory in normally dry, indoor use. Galvanized or aluminum conveyors give better service if the conveyor is to be installed outdoors or operated in wet conditions.

*Photographs and information courtesy of The Alvey-Ferguson Co., The E. W. Buschman Co., Conveyor Systems, Inc., Harry J. Ferguson Co., Lamson Corp., Logan Co., Mathews Conveyor Co., Mechanical Handling Systems, Inc., The Rapids-Standard Co., Inc., Standard Conveyor Co., and Conveyor Equipment Manufacturers Association.*

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- \* Maintains efficiency in idling... Assures constant operation
- \* Exclusive triple action filtering with chamois-felt-screen system
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Borg-Warner Corporation  
Decatur, Illinois

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# Along the Aisles

Equipment featured at the 1959 MHI Exposition

## Crane Line Represented

Company had on display a 5 ton self-propelled crane, and 11 ton self-propelled, and a 15 ton truck-mounted



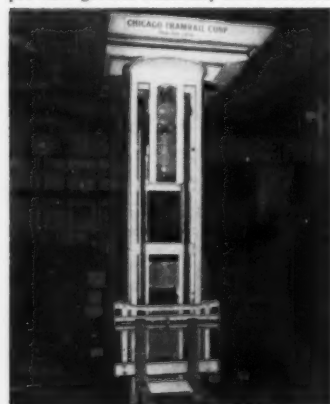
crane. In the gasoline or diesel-electric field a range of crane sizes from 5 to 50 tons is available.

*Coles Cranes, Inc.*

Circle 251 on Reader Service Card

## Electrically Operated Column

Company showed its Trak-Rak column. Installed on an existing bridge, it provides greater flexibility and increased



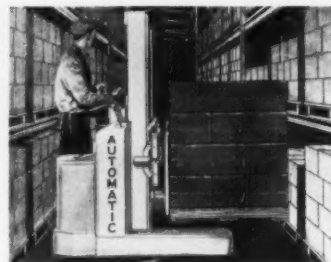
handling efficiency by permitting vertical stacking and storage. It is equipped with a carriage on which forks are mounted.

*The Chicago Tramrail Corp.*

Circle 252 on Reader Service Card

## Truck Steers Every Direction

Company unveiled the "Crab" truck with Stero-Matic steering, which permits traversing in any direction, at any angle,



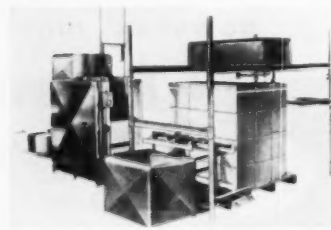
with any shaped load. Having a 65-inch overall length, the truck can move in any direction, will turn completely around in a 70-inch aisle. Bulky, odd-shaped loads can be carried across the truck's forks.

*Automatic Transportation Co.*

Circle 253 on Reader Service Card

## Automatic Pallet Loading Displayed

An automatic pallet loader was on display for users of cases, cartons, kegs, and other containers. It automatically



loads pallets, skids or dollies. It eliminates calculation and setup of pattern

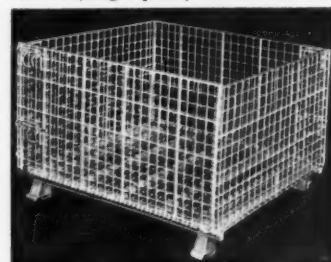
design. If required, the loader tapes the top layer of cartons for maximum stability.

*Lathrop Paulson Co.*

Circle 254 on Reader Service Card

## Low Cost Container Offered

The "Scotsman" was announced as a low cost, high quality metal container.



Constructed of steel mesh, this Palletainer model has a 4000 pound capacity. size production and elimination of some Costs have been lowered by mass, single-optional features, says the manufacturer.

*Union Steel Products Co.*

Circle 255 on Reader Service Card

## Showed How To Improve Truck Performance

The Greerolator was demonstrated as a hydraulic component for improving



fork lift truck performance. The unit cushions shock, reduces spillage of loads, and extends fork truck life, says the manufacturer.

*Greer Hydraulics, Inc.*

Circle 256 on Reader Service Card

## Exhibited Dock Shelter

The "Perma-Dox" truck dock shelter has an elasticized front, cape cover, and



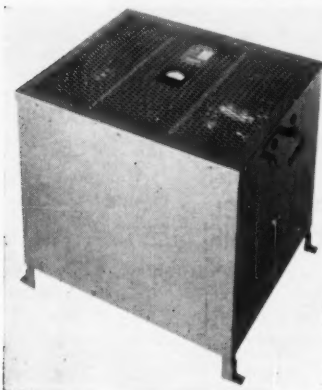
adjustable head curtain. It fits any type truck snugly. Its Fro-Prene fabric gives protection in all weather.

*Frommelt Industries, Inc.*

Circle 257 on Reader Service Card

## Battery Charging

Rechargers were the key items in this booth. It is said that the units are completely automatic once set, and that



it is practically impossible to over-charge the battery when the Recharger is set to correspond to the characteristics of the battery.

*La Marche Mfg. Co.*

Circle 258 on Reader Service Card

## Label Printer Demonstrated

The Dual-80 Label Printing Machine was shown. It gives you stock labels, fast,



cheap. Prints from changeable rubber mat or stencil. Counts, cuts, and stacks

# be FREE!



## Choose STURDI-BILT racks

the storage system without restrictions on size, shape or types of goods at any time!



Sturdi-Bilt is the most versatile racking system in use today. It is completely adjustable to keep pace with any inventory change, handling method or type of storage.

At all times you have complete freedom to change your procedure for more efficiency—WITHOUT RACK LOSS! Pallets, skids, dies or bulk—of any size, shape or weight—can be handled interchangeably—without rack change.

Find out about Sturdi-Bilt today!

Patented Float Wedge Construction completely eliminates BOLTS, NUTS, TOOLS, ERECTION WELDING AND SPECIAL LABOR FOR ASSEMBLY OR ADJUSTMENT!



1. Just insert the "Floating Wedge"...



2. ...into the slots in the prefabricated upright frame...



3. ...and lock to the safety support bar.

U. S. PATENT NOS. 2760650, 2815130



**STURDI-BILT**

Material Handling Division  
Union Asbestos and Rubber Co.  
332 So. Michigan Ave., Chicago 4, Ill.

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## ALONG THE AISLES

(continued)

at 105 a minute. Never needs cleaning.  
*Weber Marking Systems*  
Circle 259 on Reader Service Card

### Dumpers for Every Use

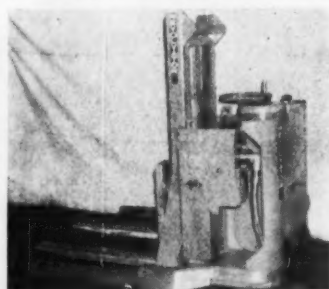
Company showed its line of lifter-dumpers. Included the Vertical Dumper, which lifts and dumps loads at any practical height. 2500 pound capacity. Also, the Senior Dumper with 3000 pound capacity and the Junior Dumper, 400 pound capacity.

*Essex Conveyors, Inc.*

Circle 260 on Reader Service Card

### Truck for Hazardous Areas

The latest powered fork lift truck for use in explosion hazardous areas was



presented. Known as the Go-Getter, it carries Underwriters' Laboratories inspected label with EX rating for operation in Class I Group D areas. One of its features is a totally and mechanically enclosed electrical system.

*Revolutor Co.*

Circle 261 on Reader Service Card

### Giant Size Fork Truck

The LIFTRUK Model FK30, with 60,000 pound capacity, was a giant among the fork lifts. This is said to be



the largest industrial fork lift truck manufactured in the country. It features streamlined design, fluid drive, and power steering.

*Silent Hoist & Crane Co. Inc.*

Circle 262 on Reader Service Card

**New**  
**Power-MAC**  
**Charger** **\$339<sup>00</sup>**  
**LIST\***

for electric lift truck batteries  
and other industrial applications

The Power-MAC keeps lift trucks on the go. Turn it on and forget it. Automatically adjusts the high and low rate charge to match the needs of the battery . . . then turns itself off when the battery is fully charged. Prolongs battery life . . . rated to 600 ampere hour battery capacity.

Every Power-MAC is built with rugged, heavy duty components for long, dependable service. Each unit fully guaranteed. Mass production techniques mean extra savings for you. Bulletin No. 101A9 gives complete details. Call or write for your free copy today!

\*For 24 volt lead acid batteries. Other voltages available.



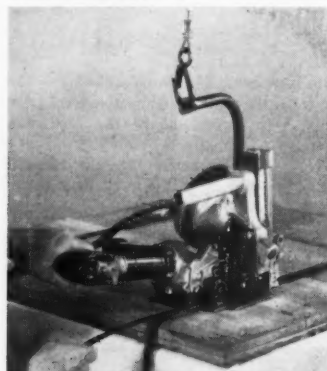
## Motor Appliance Corp.

5737 WEST PARK AVE. • ST. LOUIS 10, MO. • MISSION 7-1138

Circle 95 on Reader Service Card for more information

### Power Strap Tools Highlighted

Emphasis here was on power-driven tools for steel strapping. The A4 pneumatic Steelstrapper provides power for



every operation once the strap is inserted. It tensions seals, and cuts by power. Use it in any position. It comes in models for any gauge strapping.

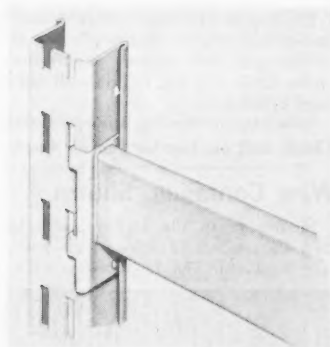
*Acme Steel Co.*

Circle 263 on Reader Service Card

### Adjustable Storage Racks

Company introduced its new Ridg-Urak adjustable storage rack system. It is unique in its method of connecting stringers to upright frames. A dual, vertical column flange formed external-



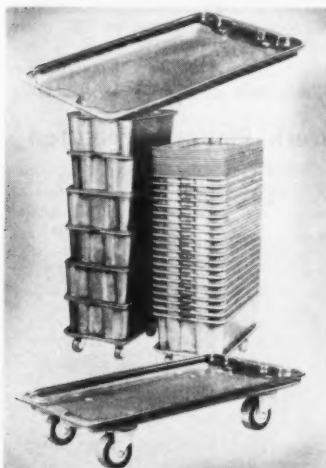


ly is used as a locking wedge. It secures the engaging hook pad against lateral movement.

Bernard Gloekler North East Co.  
Circle 264 on Reader Service Card

### Tote Pan Accessories

Two accessories for its Stack-n-Nest tote pans were displayed. Pan Covers and 4-Caster Dollies. They are molded



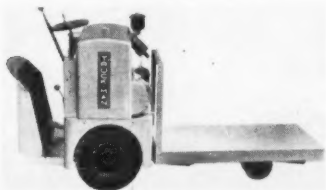
of fiberglass reinforced polyester in colors to match the pans. Both have contour offset design which allows safe, high stacking and compact nesting of the pans and covers on a dolly.

G. B. Lewis Co.

Circle 265 on Reader Service Card

### Platform Truck Featured

The Model "75" platform lift truck with a 7500 pound capacity for skids or racks was a featured item. It has one-finger power steering, electric starter, and a "No-Spin" differential that delivers constant power to both drive wheels from the engine. Either wheel



JULY, 1959

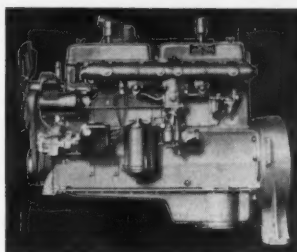
# for VERSATILITY

## MARION TRUCK-CRANE

### with two

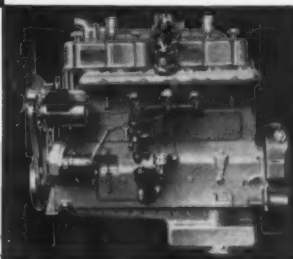
# WAUKESHA

# ENGINES



▲ Powering Crane (boom)—140-GK Waukesha Gasoline, six cylinders, 4½-in. x 5½-in., 525 cu. in. displ.

▼ Powering the Carrier—145-GKB Waukesha Gasoline, six cylinders, 5¼-in. x 6-in., 779 cu. in. displ.



**Leonard Bros. Transfer of Miami**—one of Florida's largest truck-crane users—has worked a wide variety of jobs quickly and profitably with their Marion Type 43-M mobile truck-crane. The upper frame has a Waukesha 140-GK Engine and Twin Disc torque converter; the Henderson Carrier has a 145-GKB Waukesha Engine. The truck crane is shown unloading a 2700 hp Diesel engine from railway flat cars to carry-all truck, later unloaded at power plant in Sebring, Florida. The huge engine with its two components, weighing 34½ tons and 31½ tons, took two separate lifts. Seven parts of line were used with the 43-M's basic 30 ft. boom working at a close radius. Get Engine Bulletins 1548 and 1553.

**WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN**

NEW YORK

TULSA

LOS ANGELES

Factories — Waukesha, Wisconsin, and Clinton, Iowa

431

Circle 142 on Reader Service Card for more information

## ALONG THE AISLES

(continued)

will drive the truck if the other does not have traction.

*Truck-Man Lift Trucks*

Circle 266 on Reader Service Card

## Showed How To Prevent Freight Damage

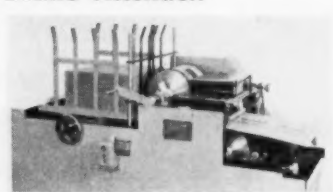
The Quick Loader is a handy boxcar partitioning and load locking installation that permits quick three-part sectioning of loads at any inch interval throughout the car. From overhead tracks, bulkheads swing down snug

against the lading. When not in use, these bulkheads are spring-hoisted to the ceiling, out of the way.

*Evans Products Co.*

Circle 267 on Reader Service Card

## Box Printer Draws Attention



The Algene Flat Box Printer demonstrated how it gives quality printing at speeds up to 3500 an hour, on any size carton while still flat. It prints all four sides in one pass.

*Algene Marking Equipment Co.*

Circle 268 on Reader Service Card

## Wire Container Shown

In this booth the Lo-Tare, a light duty Cargotainer of welded wire mesh, was displayed. The Lo-Tare has capa-



city up to 1000 pounds. Net weight is 82 pounds; dimensions are 28" wide, 36" long, and 24" side height.

*Tri-State Engineering Co.*

Circle 269 on Reader Service Card

## Work Platform Featured

The manufacturer showed a dual purpose elevator that serves for stacking pallets and as a maintenance lift. The



platform slips on over the forks. A set of controls at the end of an extension cord gives the man on the platform the ability to raise or lower the platform.

*West Bend Equipment Corp.*

Circle 270 on Reader Service Card

## Slings and Rope

Manufacturer showed slings, swaged



## Designing and Building

heavy-duty air-cooled engines

is our **ONE** and **ONLY** business

• Our complete engineering, production, distribution and service facilities are devoted to the single-minded task of supplying engines to match the critical performance demands of all types of modern mechanized equipment within a 3 to 56 hp. range.

Wisconsin specialization extends to full-scale concentration on 4-CYCLE HEAVY-DUTY AIR-COOLED ENGINES . . . backed by extensive and diversified experience in the production of engines dating back to 1909.

When you specify "WISCONSIN" you definitely get a *better engine* . . . an engine with a basic load-holding High Torque factor; an engine in which over fifty years of exclusive engine-building experience has paid off in terms of heavy-duty serviceability under all types of operating conditions, in every equipment category; a universally known engine that "has everything" that know-how and a quality-conscious production policy can provide . . . backed by a world-wide sales and service organization in 90 countries.

This, we believe, is what you are looking for as original power components for *your* equipment. Let's get together. Engine Bulletin S-237 is yours for the asking.



Circle 143 on Reader Service Card for more information

rope assemblies, and wire rope. Specially constructed "Safe-Guard" slings were featured in cable laid and rope laid types.

Macwhyte Co.

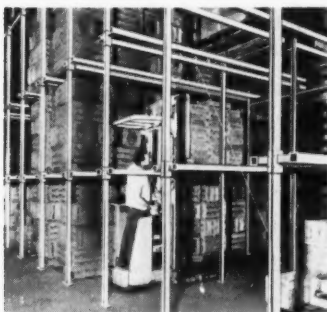
Circle 271 on Reader Service Card

### We Ran Out of Space . . .

. . . in which to cover the tremendous amount of equipment at the 1959 Exposition. This year's show was on a much larger scale than its predecessors. So we're going to run Along the Aisles as a two-part feature. Look in our August issue for more of the outstanding material handling products exhibited.

### Drive-In Racks Highlighted

Drive-in racks were this company's featured product. The racks are from

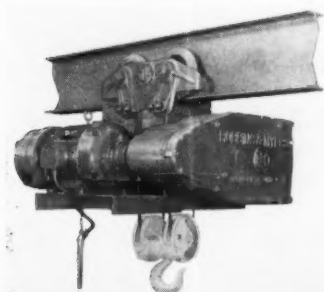


two to ten or more pallets deep. Drive-in racks can be used against walls for space saving, or spaced away from walls for truck entrance from either end.

American Metal Products Co.

Circle 272 on Reader Service Card

### Hoists Demonstrate Low Headroom



A demonstration of low headroom was given by the Type FE electric

## Kwik-Mix® HI-LIFTER works anywhere



. . . . . powered by 4-wheel-drive tractor . . . eliminates need for expensive paving of yards . . . converts idle, unsurfaced areas into productive storage space

### How much does it lift?

. . . Up to 4,000 lbs. at 22½-ft. height, and 24-in. load center . . . 6,000 lbs. at 12-ft. height . . . and that's not all! Smooth-flow hydraulic power "inches" the load up, down, for careful precision spotting, stacking, stockpiling . . . or hoists load at speeds up to 60 ft. per. min. on fast production work. Power tilts the mast 5° forward, 10° back for load pick-up and release. Forks quickly adjust to 64-in. width for handling palletized, unitized or bulky material. Mast telescopes for low headroom. Single mast design, and open-mesh "see-through" canopy give good visibility.

3 SIZES — In addition to Hi-Lifter, Kwik-Mix also builds 2 low-cost Moto-Bug fork lifts (1,000 and 1,500 lb. capacities) with multiple quick-change attachments.

Need more material-storage space? Here's a practical way to turn *idle*, undeveloped areas around plants, warehouses, yards into *productive* storage space without costly paving . . . and still keep materials flowing smoothly. Put a Kwik-Mix Hi-Lifter in your yard! Powerful 4-wheel drive on 4 big equal-size lug-type tires takes it over *any* terrain . . . keeps loads moving in *all* weather. In mud, snow, *power-transfer* differential automatically transmits torque to wheels on firmest footing. Torque-matic-drive transmission gives smooth infinite speeds up to 18 m.p.h. forward and reverse *with no clutching*. There's *full-time* power steering at *all* engine speeds . . . 4-wheel power brakes, plus *positive* parking brake that locks drive shaft . . . "kick-out" into 2-wheel drive when roading. Choice of 75 h.p. water-cooled gas engine or 70 h.p. diesel. *How about a Hi-Lifter demonstration at your plant?* Phone your Kwik-Mix distributor today, or write to us for complete information.

mail today

KWIK-MIX COMPANY

PORT WASHINGTON, WIS.  
Division of Koehring Co.

Send us: ☐ bulletin ☐ price information on Hi-Lifter ☐ also data on Moto-Bugs

NAME

TITLE

COMPANY

STREET

CITY, STATE

KM011 MHE



MOTO-BUG® MATERIAL-HANDLING EQUIPMENT • FORK LIFT TRUCKS • DANDIE® MIXERS • KA MO EARTH BORING & DRILLING EQUIPMENT

Circle 79 on Reader Service Card for more information



## MAKE DUMPING A **PUSHOVER!** AND CUT HANDLING COSTS

Looking for a safe, economical way to lift and dump any free-flowing material in one operation? Now you can easily handle all bulk material . . . in solid or powder form, and in any type of container, such as drums, boxes, barrels and even bags . . . with these material handling "power-houses."

All dumpers are flexible in design so they may be fitted to meet exactly with customers' specifications. Many built-in safety features are employed throughout to insure long hours of maintenance-free operation.



Write for FREE catalog —

**ESSEX**  
CONVEYORS, INC.  
Dept. MH, 165 Franklin Ave., Nutley 10, N. J.  
Circle 45 on Reader Service Card

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## ALONG THE AISLES

(continued)

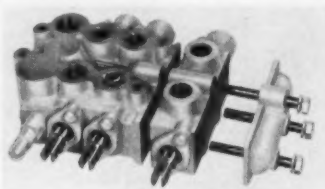
hoists. For example, the 5 ton model required only 24 inches of headroom. Hoists are available in capacities from 1½ through 7½ tons.

Hoist & Crane Div.  
Robbins & Myers, Inc.,

Circle 273 on Reader Service Card

## Valve for Industrial Trucks

One of the hydraulic components on hand was the new V34 series directional control valve with add-on sections. It is



designed specifically for use on industrial trucks so that accessory equipment may be added in the field without disturbing the original hydraulic control.

Hydrex Div.,  
The New York Air Brake Co.

Circle 274 on Reader Service Card

## Duplicates Crane Working Conditions

Booth was covered with tramrail hoisting and conveying equipment supported on a special steel superstructure. The

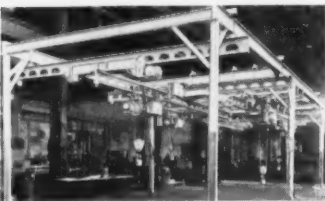


exhibit reproduced actual working conditions. The display included manually-operated and power-driven overhead tramrail cranes, carriers, and hoists.

Cleveland Tramrail Div.,  
The Cleveland Crane & Engineering Co.

Circle 275 on Reader Service Card

## Running Gear Exhibited



One of manufacturer's products was a cart and running gear for tracking and trailing within tight turning radius with

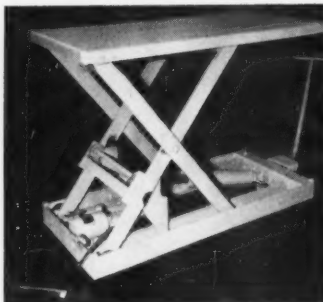
vehicles towed in train. Towbar or pedal actuated. Model No. D-15151 (photo) has a 4.80/4.00-8 tire size.

Saginaw Products Corp.

Circle 276 on Reader Service Card

## Lift Table Introduced

Latest addition to the company's line of material handling equipment was a hydraulic powered, scissor arm sup-



ported lift table. Known as the "Lift-Table" the unit is available in three standard models with 1500, 3000, and 6000 pound capacities. Platform sizes are 18" x 54", 24" x 54", and 30" x 60", respectively.

Globe Hoist Co.

Circle 277 on Reader Service Card

## Exhaust Purifiers Displayed

Catalytic exhaust purifiers were presented to show how to eliminate high percentage of carbon monoxide and



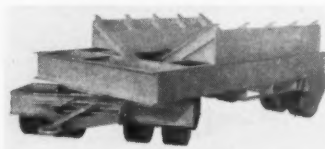
other impurities from fuels. Included are gasoline (white or leaded), LP-Gas, and diesel-engine (four cycle) exhausts. Photo shows the standard OCM catalytic muffler for use with vehicles burning unleaded gasoline or LP-G.

Oxy-Catalyst, Inc.

Circle 278 on Reader Service Card

## Coil Handling Trailer Described

Manufacturer offered information



MATERIAL HANDLING ENGINEERING



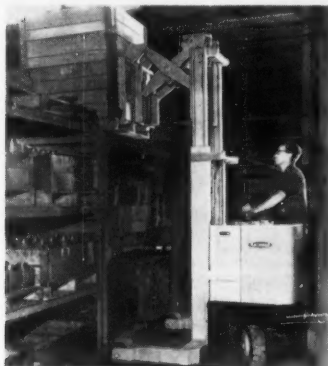
about a 20-ton coil handling trailer. It handles coils of various diameters up to 64 inches long. The trailer is only 28 inches high to the top of the frame.

*Ohio Galvanizing & Mfg. Co.*

Circle 279 on Reader Service Card

## Announced Heavy Duty Truck for Narrow Aisles

A 24-volt electric system provides power for faster lifts and travel speeds



on this heavy duty truck. A 4000 pound capacity "Reach Fork" model is illustrated. Straddle base fork lift trucks are also offered in the heavy duty models.

*Raymond Corp.*

Circle 280 on Reader Service Card

## Personnel Carrier

Company exhibited its 780 Truckster. Capable of handling 800 pound pay-



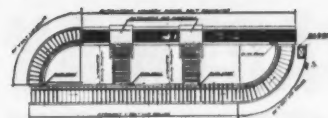
loads at an operating cost of less than a penny a mile. Powered by a 7.95 horsepower high compression engine, it has automotive type clutch, transmission, and differential.

*Cushman Motors*

Circle 281 on Reader Service Card

## Controls Have Memory

Manufacturer showed the Magnetic Memory System, a selective conveyor control. It is used in automatic addressing and distribution of parcels and mail. Destination control is accomplished by a static magnetic mem-



ory system. The usual system has a pushbutton dispatch station which sets up the addressing unit with an appropriate code.

*Standard Conveyor Co.*

Circle 282 on Reader Service Card

## New Truck Control Highlights Exhibit



A new lift truck control system, featuring a single-pedal direction and speed control, was the attraction at this exhibit. The Monotrol system combines

**save**

TIME • LABOR  
MONEY  
THROUGH  
EFFICIENT  
ORDER  
PICKING

**new**

**4-PAGE FOLDER TELLS HOW**

Check your present system against the "10 Basic Rules for Efficient Order Filling"...see how an efficient system speeds shipping, eliminates errors, cuts labor costs, and saves floor space. See how Palletflo and Versarack live storage racks, conveyors, and other components can work for you. Write for your copy of Brochure 1201 today.

**MAH**  
STANDARD

**M-H STANDARD CORPORATION**

515 Communipow Ave., Jersey City 4, N. J.

Circle 153 on Reader Service Card  
JULY, 1959



Prompt service to belt users is assured by two factories, one in the Middle West and one on the Pacific Coast.

**Cyclone Fence Dept.**  
**American Steel & Wire**  
Division of  
**United States Steel**



Manufactured at Waukegan, Ill. and Oakland, Calif. • Sales Offices Coast to Coast

## CY BELT says

"We make more different types of processing belts than anyone else!"

Cyclone makes all four basic styles of conveyor belting: spiral woven friction drive, spiral woven chain drive, flat wire friction or sprocket drive, and flex-grid. These are available in the widest variety of sizes, meshes, weaves, steels and alloys. We make reinforcing members, flights, side plates and other specialties to meet specific needs. That's why our recommendation can be tailored to your plant and your product. Why not contact a trained Cyclone representative for help in analyzing your processing and material handling problems? Fill in the coupon today.

*USS and Cyclone are registered trademarks*



**Cyclone Metal Conveyor Belts**  
Spiral Woven • Flat Wire • Flex-Grid

### MAIL THIS COUPON

Cyclone Fence, American Steel & Wire  
Dept. MM-79, 614 Superior Avenue, N.W.  
Cleveland 13, Ohio

Please send me, without obligation, your catalog  
No. 5 on Cyclone Processing Belts.

Name.....

Company.....

Address.....

City..... State.....

Circle 35 on Reader Service Card for more information

# HARTMAN STORAGE SYSTEMS

**PALLET RACKS  
DIE RACKS  
DRIVE-IN RACKS  
BAR STOCK RACKS  
SPECIAL RACKS**

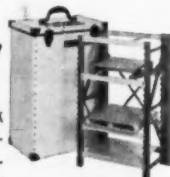
**Hartman FLEXIRACK**  
**FOR MAXIMUM  
SPACE ECONOMY**



Flexirack's outstanding feature . . . the fully adjustable boltless shelf.

**NOW  
AVAILABLE!**

24" Miniature Flexirack available from all Hartman dealers for demonstration right before your eyes.



**WRITE FOR NEW  
FLEXIRACK BULLETIN**

**HARTMAN  
METAL FABRICATORS**  
130 Murray St., Rochester 6, N. Y.

Name .....

Firm Name .....

Address .....

City ..... State .....

Circle 68 on Reader Service Card

104

## ALONG THE AISLES

(continued)

throttle and direction control in one pedal. It will be standard on the Space-Saver 30, 40, and 50 lift trucks equipped with Power-Shift Hystamatic transmission.

*Hyster Co.*

Circle 283 on Reader Service Card

## Interlocking Crane Premiere

Company featured its double bridge, motor-operated, interlocking crane for the first time. The 5-ton capacity crane



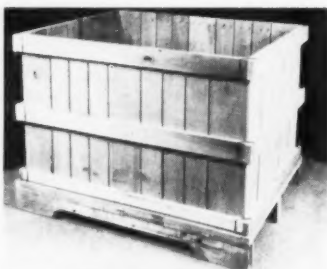
provides more head room as operators can bring the hoisting mechanism up between the 2 bridges and give greater hook clearance. Increased capacity is another feature.

*American MonoRail Co.*

Circle 284 on Reader Service Card

## Presented Re-usable Shipping Container

Company offered sturdy construction and low initial cost in its new Gen-



eralift Tie-Corner re-usable pallet boxes. Usual construction includes side slats of hardwood fastened to hardwood cleats. Side sections are held fast to the pallet with Generallock metal clips.

*General Box Co.*

Circle 285 on Reader Service Card

## Portable Picking Frame

A new portable, picking frame for double-decking hard-to-store and crush-



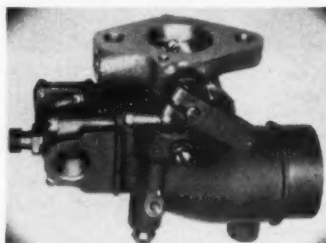
able merchandise was exhibited. You need no nuts, screws, bolts, or fixtures to assemble. Two steel tube frames snap together to form a free-standing rack, independent of the pallet.

*Tier-Rack Corp.*

Circle 286 on Reader Service Card

## Chokeless Carburetor Presented

Company introduced a development in LP-Gas carburetion — a chokeless



carburetor which requires no priming or choking. It is used on small engines (lift trucks, small tractors, power units) and is used in conjunction with the Ensign Model "RW" liquid vaporizer or the Model "VP" two-stage vapor system.

*Ensign Carburetor Co.*

Circle 287 on Reader Service Card

## Plastic Battery Containers

The PlastiCell Type RF and PlastiCal Type RCF batteries have been converted to clear plastic containers. Manufacturer says that the high-heat-resistant, transparent, shockproof containers are lighter than the molded hard rubber



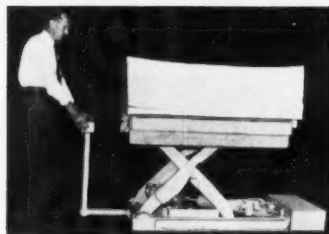
containers, thus conserving battery rack and battery room space. A Hi-Impac plastic cover is fused to the container.

*C & D Batteries, Inc.*

Circle 288 on Reader Service Card

## Powered Lift Table Announced

Manufacturer brought out a self-propelled model of its basic scissor-type, hydraulic powered lift table line.



It eliminates manual table spotting. The load can be either deposited directly on the collapsed table, or the skid deposited on the floor so that the table can be run under it.

*Southworth Machine Co.*

Circle 289 on Reader Service Card

## Present Sweeper Line

An entire line of sweepers was shown by the manufacturer. Units are designed to sweep more than 200,000 sq. ft. an



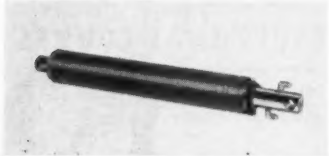
hour. Hopper capacities range from over three cubic feet to over two cubic yards. Model 703 (40,000 sq. ft. an hour) is illustrated.

*Wayne Manufacturing Co.*

Circle 290 on Reader Service Card

## Hydraulic Cylinder

A new hollow rod cylinder was displayed by this company. It is used



especially with boom extenders, and out-riggers. They are two-piece tubular rods that allow oil to flow through the

Circle 34 on Reader Service Card for more information

# Your Ideal source for custom-designed cranes CONCO



A crane, custom-tailored in every detail to your client's needs, is available from Conco at a practical cost. Here you'll find engineering experience spanning 35 years, and unique plant flexibility that permits easy handling of specialized cranes — spark and explosion proof, indoor-outdoor, circular, and cranes employing closed circuit TV for remote-control operation. May we submit a proposal on your next crane requirement—whether standard or highly specialized.

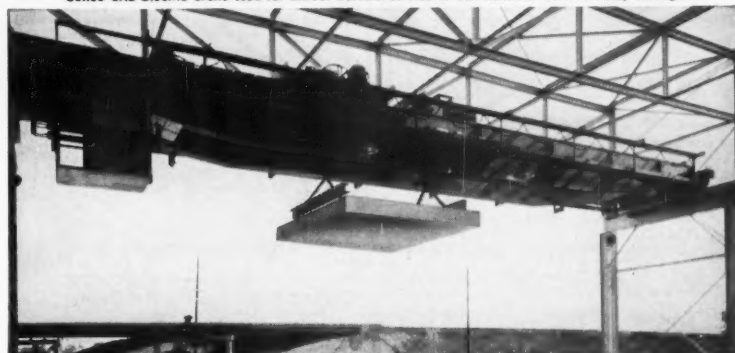
Write for Bulletin 5000A

## CONCO ENGINEERING WORKS

Division of H. D. Conkey & Company, Mendota 38, Ill.

AFFILIATE: Conco Building Products, Inc. — Brick, Tile, Stone

Conco CRB Electric Crane used for indoor-outdoor service at Underwriters' Laboratories, Chicago.



## MAKE MATERIAL HANDLING EASY



use  
**THERN**  
Hoists and Winches



Differential Hoists  $\frac{1}{2}$  and 1 ton capacities.

Lever Hoists  $\frac{1}{2}$  to  $1\frac{1}{2}$  ton capacities.

Hand and Power Winches 1250 to 5,000 lb. capacities.

Move heavy loads with ease! Use Thern Hoists and Winches. Many new features. Extra safe! Write for FREE catalog and low prices.



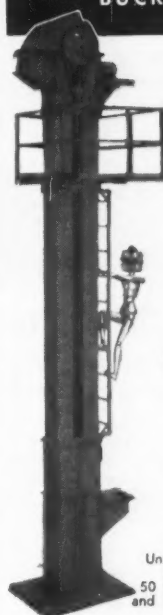
**THERN  
MACHINE CO.**  
3762 West 4th St.,  
Winona, Minn.

Circle 128 on Reader Service Card

## Universal BUCKET ELEVATORS

... Choice  
of the Wise  
Buyer

WHO  
COMPARES



Universal Bucket  
Elevators Offer:

- ✓ Better performance — A more compact unit, with cleaner, smoother operation through advanced design.
- ✓ Lower initial and operating cost.
- ✓ Minimum of maintenance and repair.
- ✓ Quick delivery.

Universal Bucket Elevators are available for capacities of 50 to 3,000 bushels per hour, and may be obtained for any exact height.

Send For  
Free  
Literature



BOX 130 CEDAR FALLS, IOWA

Circle 139 on Reader Service Card



Circle 115 on Reader Service Card for more information



## the new JUNIOR STAK-PAL

A Tubular  
Steel Stacking  
rack complete with  
removeable posts for  
as little as \$1220 each,  
f. o. b. factory for 100 basic  
racks, 30" x 42" with 24" posts.

The new JUNIOR STAK-PAL is designed for plant, or warehouse, with maximum loads of 1200 pounds per rack. Stacked to practically any desired height with safety and rigidity. Same rugged construction as the 3000 lb. capacity STANDARD STAK-PALS now in use all over U.S.A. Fifteen basic rack sizes—post heights to 48"—All racks are four-way entry.



Samples will be furnished for inspection and testing at nominal cost. WRITE TODAY!

"Cutting Your Costs is our Business"

**C. E. ROBINSON COMPANY**  
222 Colburn Avenue, Joliet, Illinois

## ALONG THE AISLES

(continued)

rod in two separate channels to operate double-acting cylinders.  
Benton Harbor Engineering Works, Inc.  
Circle 291 on Reader Service Card

## Power Dock

Among items displayed by this company, its new Model 60-30 power dock was a main attraction. It features stand-



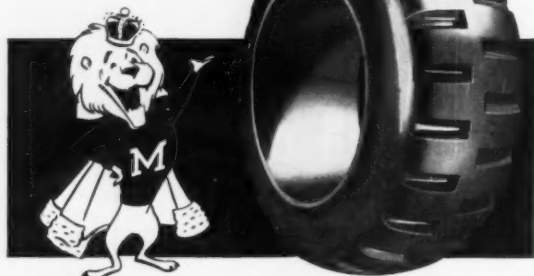
ard 30 inch in-and-out movement. This makes it versatile in reaching out for overhanging loads and spanning over obstructions like lift gates, step bumpers, etc.

Hartman Metal Fabricators, Inc.  
Circle 292 on Reader Service Card

## Engineered Conveyor Demonstrated

Manufacturer introduced "Power-Flex," a fully engineered power and free overhead conveyor system. It is de-

For premium quality  
at standard prices..



## MONARCH Mono-Cushions®

**SUPERIOR PERFORMANCE PLUS LONGER LIFE  
MEANS LOWER REPLACEMENT COSTS**

Lift truck users and brutal "torture" tests both have proven Mono-Cushion tires give more mileage per dollar. Made from Compound T-48C, the toughest natural rubber stock developed to date, these heavy-duty non-skid solid tires reduce truck and floor maintenance costs...load damage...driver fatigue.

8109-MR



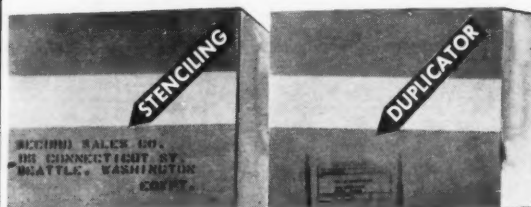
- 7-225 General Motors Bldg., Detroit, Mich.
- 2353 No. California Ave., Chicago, Ill.
- WESTERN WAREHOUSE, Reno, Nevada

GET  
THE  
FACTS...  
ask your  
Monarch  
dealer,  
or write for  
CATALOG MR-457.

Circle 98 on Reader Service Card for more information  
106



## HAVE YOU CHECKED THE READABILITY OF YOUR SHIPMENT ADDRESSING LATELY?



COMPARISON OF READABILITY FROM A DISTANCE OF SIX FEET.

In this day of increased freight rates caused by freight claims due to lost shipments it's time to take a close look at your shipment addressing. Are you getting clear, readable, large letter results? If not you should be interested in better addressing through the use of machine cut stencils. Keep this in mind — regardless of how you apply your address — it must be read easily by freight handlers.

## IT'S THE RESULT THAT COUNTS

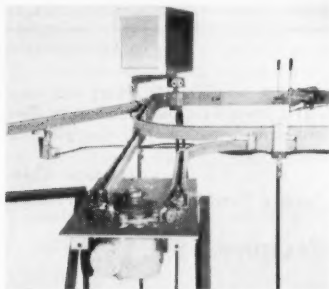
For a peek into what improper marking is costing you send for this FREE booklet of facts today.

WRITE TO  
DIAGRAPH-BRADLEY INDUSTRIES, INC.  
P. O. BOX 269 HERRIN, ILL.



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MATERIAL HANDLING ENGINEERING



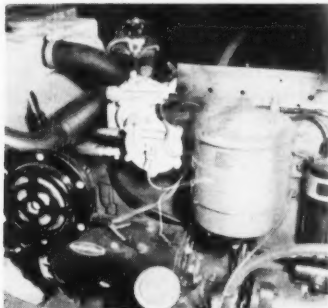


signed to handle loads up to 600 pounds per work carrier. The Telematic route selector dispatch head can be dialed to guide a carrier to any one of 80 stations in the system.

Conveyor Div.  
Columbus McKinnon Chain Corp.,  
Circle 293 on Reader Service Card

### Demonstrated LP-Gas Carburetion System

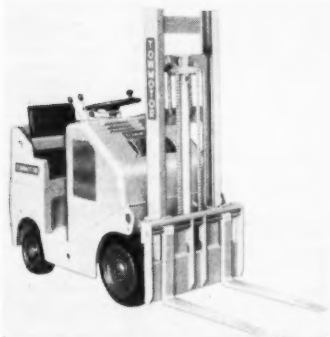
Company explained its new method of installing LP-Gas carburetion systems. The Beam Water-Runner System



is installed between the thermostat housing and the engine head. A complete installation includes a vaporizer-regulator, a Filterlock (combination filter and solenoid valve), and a Microvac vacuum safety switch.

Beam Products Mfg. Co.  
Circle 294 on Reader Service Card

### Truck Series Makes Debut

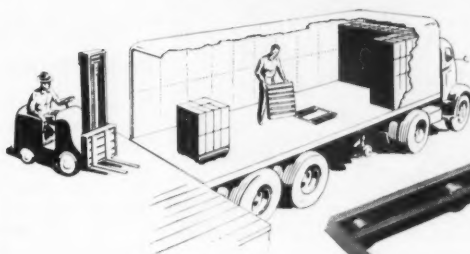


A new series of low-profile fork lift trucks was unveiled. The trucks feature a specially designed mast as-

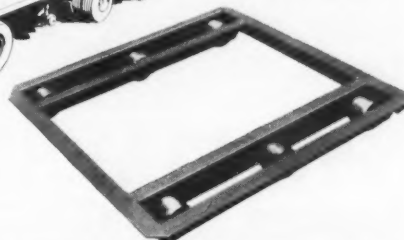
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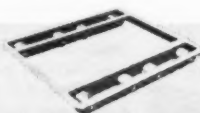
## STEVEDORE KING PALLET ROLLERS



For complete specifications, sizes, capacities, etc., write for Eng. Bulletin 102K.



Distributorships Available



ACE SWIVEL KING



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### TUNNEL PASSAGEWAY for DOCK LOADING

There's a big difference... in fuel costs  
... employee morale... productivity  
... in protection of merchandise.

expand by gravity,  
retract when not  
in use.



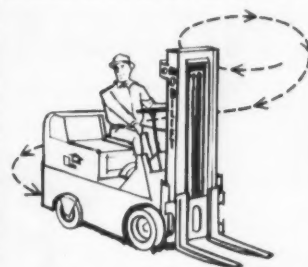
Railroad and Truck  
Dock Door Shelters

Write for information

### DAZZO PRODUCTS, Inc.

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Circle 37 on Reader Service Card



### ask your driver about MOBILIFT

and Mobilift center line steering. He'll tell you it gives him the same handling ease as power steering. No extra cost!

Look us up in the Yellow pages or write today for further details!

**LAMSON MOBILIFT CORP.**  
802 S.E. MAIN ST., PORTLAND 14, ORE.



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Circle 18 on Reader Service Card for more information

## B & P MAGNESIUM DOCKBOARDS

Reduce:

- ACCIDENTS
- LOADING TIME
- LOADING COSTS

**SAFER**

**LIGHTER**

**STRONGER**



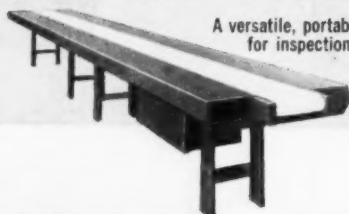
The full length hand grips, the light weight, plus the yellow curb markings to prevent run-offs make B & P the safest dockboards made.

B & P Magnesium Dockboards are 75% lighter than steel—35% lighter than aluminum.

Made of magnesium by largest U. S. magnesium fabricator; one piece curb with forged ends; stress relieved after welding. B & P Dockboards are built to last and save you money.

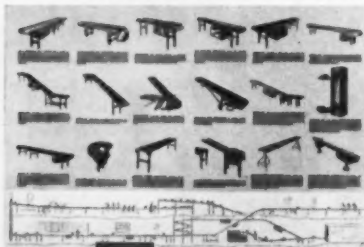
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## UNITABLE<sup>®</sup> BELT CONVEYOR



A versatile, portable conveyor for inspection, assembly, packaging.

## UNIBILT<sup>®</sup> Conveyors



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Bulletin

Illustrates and describes complete line of conveyors, contains helpful application data, and outlines service available for engineering complete conveyor systems.

CONVEYOR SPECIALTY CO., INC. 33 Newport Ave., North Quincy 71, Mass.

**KEEP CONVEYOR  
SPECIALTY IN  
MIND**

A complete line of package handling conveyors and conveyor systems.

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108

## ALONG THE AISLES

(continued)

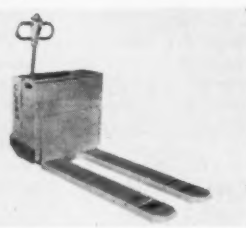
sembly that provides both high warehouse stacking and easy access to vans, boxcars, and other low headroom areas. The "Van-Stack" series consists of two gasoline or LP-Gas powered models.

Towmotor Corp.

Circle 295 on Reader Service Card for more information

## Pallet Truck Redesigned

Company introduced two redesigned battery-powered "Powrworker" trucks. Both are available in 4000 and 6000 pound capacities. One is a low lift pallet truck for use with pallets and the other a low lift platform truck for use with skids. Improvements in the pallet truck (illustrated)



come from changes in the front frame, cylinders and drive unit. The protective covering for the hydraulic system is now an integral part of the frame instead of a sheet metal cover. This provides greater protection and easier accessibility to hydraulic components. Piston-type cylinders have replaced the ram-type.

Clark Equipment Co., Industrial Truck Division

Circle 296 on Reader Service Card for more information

## Batteries Seen and Heard

Special visual and sound aids were used to demonstrate this battery line. The Gould Silconic Plate, said to extend battery



For heavy kegs—casks ... for heavy rolls ... for heavy crates—skids



"Marion"

**Now...easy loading...easy handling  
... high capacity DOLLY TRUCKS**

### FOR ALL IN-PLANT USES

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### Six styles to choose from!

No matter what you're handling, you'll find a Marion "high capacity" Dolly Truck to do the job. A complete line—easy loading...easy handling... rugged construction. Low wheel types... tilting action available...adaptable for wood platforms. Capacities from 2000 to 8000 lbs. Best ever in Dolly Trucks. Order from your jobber or write.

### SEND FOR CATALOG

#### SIX DIFFERENT MODELS

Model	Size	Cap.	Model	Size	Cap.
No. 1	22"x17 1/4"x3 1/2"	4000#	No. 5	30"x26x8 3/4"	4000#
No. 2	30"x20 1/2"x3 1/2"	4000#	No. 6	23x15 1/4"x4 1/2"	2000#
No. 3	30"x20x6 1/2"	4000#	No. 7	30x17 1/2"x6 1/4"	8000#

**CHICAGO MANUFACTURING & DISTRIBUTING COMPANY**

1932 West 46th Street • Chicago 9, Illinois

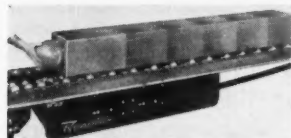
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MATERIAL HANDLING ENGINEERING

life substantially, was the subject of the presentation. In this development, silver cobalt atoms in the active material migrate to the grid, creating an armor that protects the grid members from the corrosive attack of acid and oxygen. Manufacturer also demonstrated the Fulpower battery and charger combination which requires only a 12-volt, single phase, 60-cycle outlet.

*Gould-National Batteries, Inc.*

Circle 297 on Reader Service Card

## Pressure Sensing Conveyor Demonstrated



The A-P-C (Adjustable Pressure Control) wheel conveyor has a series of trigger and pressurewheels combining to drop the 4-inch belt away from contact with all but the first carton in the line. The balloons in the photograph show that there is virtually no forward (line) pressure exerted by the cartons in the line. They are at rest on the load-bearing wheels on either side of the belt.

*The Rapids-Standard Co., Inc.*

Circle 310 on Reader Service Card

## Dockboard Introduced



The company's aluminum alloy was represented in the form of a new line of "Truck Service" dockboards. It is claimed that capacity increases of up to 50 percent are available with the new STA and MTS units made from this alloy. This provides an intermediate range of capacities to cover all dock requirements.

*F. H. Langsenkamp Co.*

Circle 298 on Reader Service Card

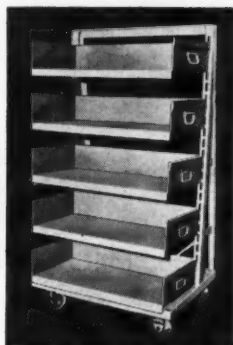
## THE VER-T-RACK THE ACME OF VERSATILITY



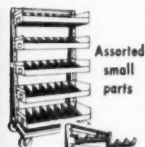
For small parts



Gears, Wheels, Rings, etc.



HEIGHT—65½" LENGTH — 35"  
WIDTH — 24" CAPACITY 2000 lbs.



Assorted small parts



Tubing, shafting, Axles, etc.

- ELIMINATES MATERIAL DAMAGE
- REDUCES WORKER FATIGUE
- MAXIMUM EFFICIENCY AT MINIMUM COST

- EXPEDITES MATERIALS UP TO 60% FASTER
- SAVES MAN HOURS
- SAVES FLOOR SPACE
- GREATER SAFETY FACTOR

Equipped with 6" roller bearing steel wheel casters

VER-T-RACK can be handled with lift truck.

Trays are adjustable on VER-T-RACK

PRICE — \$49.50 Varied Accessories Extra

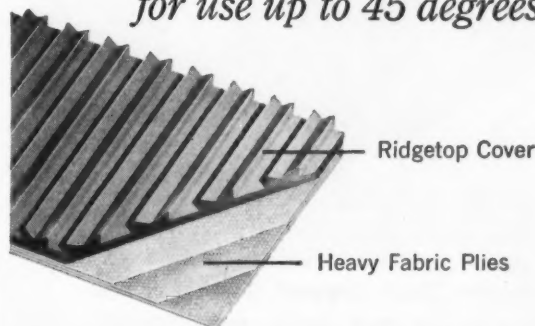
Slightly higher west of the Rockies Write today for descriptive literature



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JULY, 1959



## STEEP INCLINE? specify **ridgetop** for use up to 45 degrees!



Ridgetop Cover

Heavy Fabric Plies

Troubled with slippage on steep inclines? Or, perhaps you'd like to go steeper, to save floor space and belt length, yet can't because your present belt won't handle the angle? Then New York Rubber's Ridgetop is your answer!

The exclusive patented design of this ingenious belt incorporates a soft, pliable (yet tough) two-way toothed cover surface. It grabs the widest range of package sizes, shapes, weights and surfaces. The corrugated peak design provides the highest friction coefficient in this grade belt, resisting slippage on inclines up to 45°.

Other features include non-hardening cover material, and self-cleaning surface design (V-grooves flare as belt flexes over pulleys). Special oil-resistant Neoprene construction and a variety of covers are available on special order, although our standard cover will have the greatest gripping power.

For more information about this and other unique New York Rubber belts, write to Department MHE-10



**NEW YORK RUBBER**

CORPORATION

Established 1851

100 PARK AVENUE • NEW YORK 17, NEW YORK

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**just like banking money!**

# BORROUGHS STEEL SHELVING

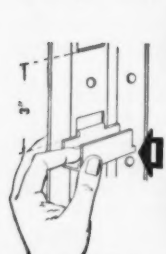
**saves labor, time and money!**



**send for catalog**

Represented in Sweet's Catalog,  
Plant Engineering File 4G 80

**Borroughs Shelf Support Bracket makes  
Borroughs the most simple, most flexible, most  
rapidly assembled shelving on the market!**



**Insert 4 shelf support  
brackets . . . no fum-  
bling with studs, bolts,  
nuts or lock washers.**



**and then Tilt shelf into support  
brackets . . . and shelf  
is ready for loading.**

Borroughs Steel Shelving starts right off to save you labor, time and money . . . and it keeps right on saving you labor, time and money as long as you use it. That's because it's so simple and quick to assemble . . . so downright rugged and tough . . . and because Borroughs Shelf Support Brackets make the installation or rearranging of shelves a finger-tip operation. ALSO — except for the top shelf (2 bolts and 2 nuts), no other bolts or nuts are required for shelves. Send for more convincing facts today!

**BORROUGHS MANUFACTURING COMPANY  
OF KALAMAZOO**

A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT

3022 NORTH BURDICK ST. **amp** KALAMAZOO, MICHIGAN

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110

## ALONG THE AISLES

(continued)

### Elevating Trailer Exhibited

Manufacturer featured an elevating trailer for all-purpose handling that lifts its own load in 40 seconds.



The Trailevator has a hydraulically operated bed which lowers to receive load at ground level, then lifts and locks into hauling position. Engineering features include: patented load leveling device to compensate for non-uniform load distribution, independent wheel suspension, and dual leaf-type springs. Tailgate forms heavy-duty loading ramp as well as secure box closure.

Magline Inc., Trailevator Div.

Circle 299 on Reader Service Card for more information

### Truck Had Articulated Steering

The Kart-All platform truck featured articulated steering. This permits reduced steering radius while eliminating steering linkage to a steering axle.



The Kart-All is steered by hydraulic action, which bends the truck, right or left, by use of a steering pivot between the power package and the load platform. Drive wheels of this unit are 6:00 x 16; load wheels are 6:00 x 9. The Kart-All is powered by a Continental Y112 engine and is equipped with a four speed transmission.

Erickson Power Lift Trucks, Inc.

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**NEW  
safety for  
dock traffic  
NEW  
operating ease  
NEW**

**RITE-  
HITE**



### manually operated MECHANICAL RAMP

New dynamic counterweight suspension of this Rite-Hite Model 72 eliminates the need for a ramp platform control lever. Where Model 72 is equipped with Rite-Hite's exclusive horizontal adjustment, the adjustment lever lies below dock surface when not in use. Thus, no levers protrude above the dock floor to impede traffic or endanger handling equipment and personnel.

Rite-Hite dynamic counterweighting also makes it possible to actuate the ramp platform with almost effortless ease. The platform practically "floats" to up or down positions.

A new positive, adjustable locking mechanism locks the ramp platform level with the dock surface when desired, permitting dock traffic up to the ramp's rated capacity to travel across it freely. Available for Model 72 ramps purchased without the Rite-Hite horizontal adjustment feature.

For full details on this new Model 72 — and any other of the complete line of manually operated and truck-actuated Rite-Hite Ramps, all of 10 ton capacity — write today, Dept. F-79.

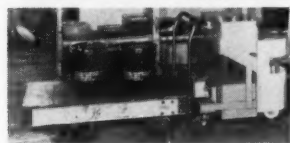
**RITE-  
HITE  
DIVISION**

**LOOMIS MACHINE COMPANY**  
133 EAST FOURTH STREET, CLARE, MICHIGAN

Circle 81 on Reader Service Card for more information  
**MATERIAL HANDLING ENGINEERING**



## Tractor Has Magnetic Coupling



Manufacturer introduced the Model 570 Powr-Wheel. This is a battery powered, self contained tractor type propulsion unit. It attaches to any vehicle in seconds with magnetic coupling.

Manufacturer says it is ideally suited for use with a fleet of hand trucks. The rigid magnetic coupling prevents jack-knifing when reversing.

Vanguard Engineering Co.

Circle 308 on Reader Service Card

## Light-Duty Overhead Conveyor



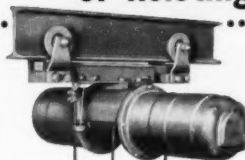
The Model 232 conveyor is designed for light duty. It features sprocket drives that are available with capacities ranging from 350 to 650 lb. and with horsepower ratings from 1/4 to 2 hp. Conveyors can be driven at

speeds ranging from 1 to 50 fpm. Manufacturer says that a special feature of this conveyor is the wheel, which was developed specifically for trolley conveyor service. Standard vertical bends are made in 2', 4', and 6' radii. Sprocket turns are available in 30, 45, 60, 90, and 180 degree units. Spread type and 180-degree sprocket type take-up assemblies are standard. It is said that a test unit was run continuously for a few months so that the conveyor underwent unusually severe service when tested. The unit has a Junior Tee track that is light and reasonably easy to install. Rod hanger and angle hanger supports are available.

Mathews Conveyor Co.

Circle 309 on Reader Service Card

## SPECIALISTS on all types of Hoisting Equipment

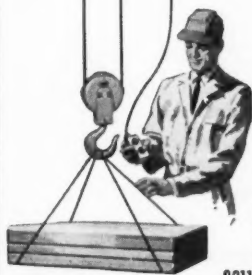


Consult us on the design and building of:

- ELECTRIC HOISTS
- AIR HOISTS
- MONORAIL TRACTORS
- CAB HOISTS
- TRAVELING CRANES

Ask for catalog 795

The Detroit Hoist & Machine Company's designing and building of hoisting equipment is backed by more than 50 years of hoist and crane experience here in the city of Detroit—the world's greatest production center and the most extensive area of material handling of all kinds.



**DETROIT HOIST AND MACHINE COMPANY**

8211 Morrow St., Detroit 11, Mich.

DESIGNERS AND MANUFACTURERS SINCE 1905

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JULY, 1959

## The MARTIN-DECKER Sensater Crane Scale

FRICITIONLESS OPERATION

GREATEST ACCURACY



"EMDEE SAYS"

CONSIDER THESE  
MARTIN-DECKER CRANE  
SCALE ADVANTAGES.

**EASY HANDLING**—Light weight and Compact. Full 360° Hook Rotation permits swiveling in any direction.

**MORE CONVENIENT**—Manual Tare Adjustment zeros-out grabs, hooks, chains, tote boxes, etc. Minimum Headroom Loss.

**EASY READING**—Adjustable Gauge can be tilted up or down. Dual Range Dial provides accurate distant and close reading. Entire Dial Circumference Calibrated for precise readability.

**SAFER**—Five-to-one safety factor allows ample overload margin. **LOWER IN COST**—Averages lower in price than hook scales of comparable capacities.

1,000 to 20,000 lb. CAPACITIES.

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**MARTIN-DECKER CORP.**  
HOME OF THE WEIGHT INDICATOR — LONG BEACH, CALIFORNIA

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WHY IT PAYS TO USE

# Rubbair<sup>®</sup> Door

the true door —  
not a curtain,



One of several Rubbair Door installations at the Strathmore Paper Co., West Springfield, Mass.



**STRATHMORE**

## READ THIS ACTUAL CASE HISTORY—

"The installation of Rubbair Doors has really solved three problems for us," said Mr. J. S. Mudgett, Chief Engineer, Strathmore Paper Co., West Springfield, Mass. "The first problem was the necessity for a door that would permit a freeflow of heavy fork-lift truck traffic without requiring a stop to mechanically operate a conventional type door. The second problem was considerable heat loss to open warehouse area which was reduced by fast closing action and air seals. The third problem was maintenance costs which have been reduced because of the flexibility of the door. Of course, other benefits have been realized such as safety for workmen as well as a considerable reduction of dust and dirt from the loading platform."

**RUBBAIR<sup>®</sup> DOORS** Assure Trouble Free Operation With

- Flexible construction
- Safety-cushion nose
- Scuff-resistant wear panels
- Rugged V-ram hinges
- Positive air seal
- Shatter-proof windows

If you have an industrial door maintenance problem, let us help you solve it. Write us the details or send for a free illustrated catalog.

**Stic-Klip**

**MANUFACTURING CO., INC.**  
**RUBBAIR<sup>®</sup> DOOR DIVISION**  
58 Regent Street  
Cambridge 40, Massachusetts

Circle 152 on Reader Service Card for more information  
112

## ALONG THE AISLES

(Continued)

### Missile-Carrying Truck Shown

One of the vehicles exhibited by this manufacturer was a side-loading Traveloader with a missile handling attachment. The Traveloader is an industrial truck available in gasoline, diesel, and electric powered models. It is available in capacities from 4000 to 30,000 pounds. Its specialty is handling long, bulky loads and carrying them on its twin decks. The truck travels both in the plant and on the highway.



Baker Industrial Trucks, Div. of Otis Elevator Co.

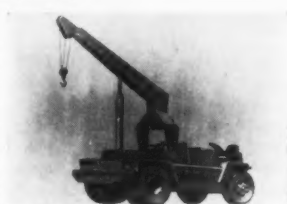
Circle 311 on Reader Service Card

### Mobile Crane Exhibited

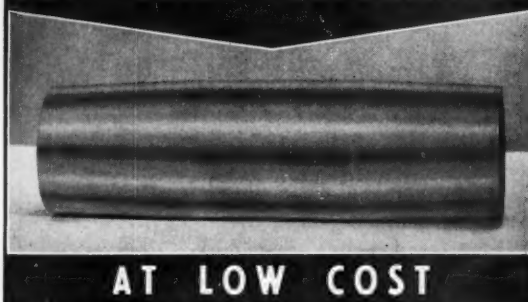
Company introduced a 360-degree Swing-Boom Crane Kar at the Exposition. This gasoline powered, rubber tire crane has a continuously revolving lifting unit that picks up its rated capacity and travels with the load. It is a fully mobile unit that operates without use of jacks or outriggers. The new 360-degree rotating model Crane Kar is available in 12,000 and 20,000 pound capacities.

Silent Hoist & Crane Co. Inc.

Circle 312 on Reader Service Card



## TOP PULLEY PERFORMANCE



**AT LOW COST**

Here is the New Hydro Crowned Pulley with the crown right in the steel. They give better conveyor belt performance than expensive lathe-crowned pulleys. They cost no more than those with lagged crowns. If you manufacture conveyors, a savings of up to \$3.00 per pulley can be realized.

- Better belt tracking
- No pulley maintenance
- No lagging crown failure
- Sizes start at 3" diam.

If you are buying conveyors, specify these pulleys. Better conveyor performance will be the result.

For complete information, write: Dept. F

Patents applied for.

THE

**CHANTLAND COMPANY**  
HUMBOLDT, IOWA U.S.A.

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MATERIAL HANDLING ENGINEERING

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\*For additional data and catalog, see the 1958-59 FLOW Directory.

JULY, 1959

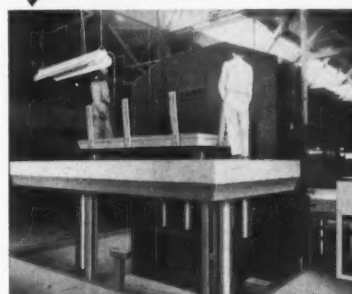
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with greater economy and efficiency



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## ALONG THE AISLES

(continued)

### Electric Hoist Presented

Models of the CM Lodestar were displayed. This electric hoist line has capacities ranging to two tons. Model



R has a two-ton capacity and lifting speed of 8 fpm. Model L has a one-ton capacity at 16 fpm; Model J has a ½ ton capacity at 32 fpm.

*Chisholm-Moore Hoist Div.,  
Columbus McKinnon Chain Corp.*

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### Showed Rack Construction

Company demonstrated the Kee-Klump system of pipe construction of racks. Kee-Klumps, malleable iron slip-

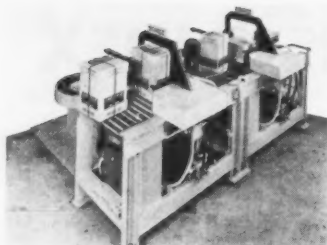


on fittings, are available in 56 different types in sizes to accommodate ¾ to 2 inch standard pipe. They are used to make racks of all types.

*Gascoignes Industries Inc.*  
**Circle 302 on Reader Service Card**

### Gave Strapping Demonstrations

Exhibitor performed interesting and informative strapping demonstrations. Equipment used included a fully automatic power strapping machine, air



powered and electric powered strapping tools, power strap feeders, steel strapping, dispensers, cutters, and accessories. The Model M20 power strapping machine is illustrated.

*Signode Steel Strapping Co.*  
**Circle 303 on Reader Service Card**

### Rail Car Mover

Manufacturer, at first public showing, displayed its 5TM Torque Converter Trackmobile. New ease of han-



dling and improved performance are features. Engine is the most powerful ever installed in a Trackmobile.

*Whiting Corporation*  
**Circle 304 on Reader Service Card**

### 3000 Pound Truck Highlighted

A 3000 pound capacity fork lift truck made its first public appearance. Called

### Two Wheel Hand Truck Standard

Availability of an 8-page revised standard has been announced by J. S. Hanson, chairman of the Standard Coordinating Committee for the Caster and Floor Truck Manufacturer's Association.

The Standard is a revision of a previous specification published in November, 1954. This standard reports on uniform specifications, load ratings, and describes the construction of two wheel hand trucks. It includes illustrations and descriptions of the various styles and types of two wheel hand trucks that are available.

Complete sets of CFTMA standards can be purchased for \$1. For information on purchasing separate specifications, also write: Caster and Floor Truck Manufacturer's Association, 27 East Monroe street, Chicago 3, Ill.

the F-48Tc, the truck features an extra-short wheelbase. It is 71 inches high, has a special low operator's seat de-



signed to keep the operator's head below the top of the uprights.

*Elwell-Parker Electric Co.*  
**Circle 305 on Reader Service Card**

### Model Drag-Line Shows Savings

Manufacturer featured a model drag-line system. Scale model trucks were

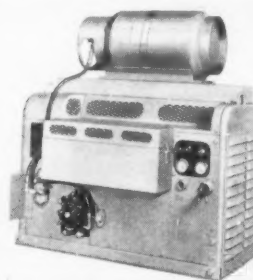


powered by an under-floor conveyor. They demonstrated the cost saving possibilities for this equipment in warehousing, order picking, and other installations.

*Nutting Truck and Castor Co.*  
**Circle 306 on Reader Service Card**

### Power Unit

On display for the first time was the company's new Model HA-5 power unit. It was designed to install on sit-down



type electric fork trucks up to 8000 pounds capacity without need for seat alterations. Features include a hinged cover and generator end plate for easy accessibility; shielded inside muffler for quieter operation.

*The Ready Power Co.*  
**Circle 307 on Reader Service Card**



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